SECTION 00 0101
HRA PROJECT TITLE PAGE

HRA SPECIFICATION – 771 Geranium Avenue
July 25, 2012

INVEST SAINT PAUL INITITIVE
NEIGHBORHOOD STABILIZATION PROGRAMS
AND REBUILDING PLAN 2009-2013

OWNER
The Housing and Redevelopment Authority of Saint Paul, Minnesota
25 West Fourth Street, Saint Paul, MN 55102, Suite 1200
Tchu Yajh – Project Manager
651-266- 6592 651-228-3341 fax
tchu.yajh@ci.stpaul.mn.us

HRA SCOPE WRITER
Lunning Wende Associates
275 East Fourth Street, Suite 620
Saint Paul, MN 55101
Robert Lunning
651.221.0915
bob@lunningwende.com

HRA Construction Manager
CPMI
3265 Northwood Circle, Suite 170, Eagan, MN 55121
Steve Terman, Project Manager
612-720-9893 mobile
952-854-3663 952-854-2847 fax
sterman@cpmi.com

SECTION 00 0110

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SECTION 00 4002

HRA BID INVITATION

PART 1 GENERAL

1.01 CONTACT TRANSLATION

A. In Hmong - Ceeb toom. Yog koj xav tau kev pab txhais cov xov no rau koj dawb, Amy Filice 651-266-6568;

B. In Spanish - Atención. Si desea recibir asistencia gratuita para traducer esta información, llame a Amy Filice 651-266-6568;

C. In Somali - Ogow. Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac, Amy Filice 651-266-6568.

1.02 PROJECT SUMMARY

A. Project description: This is a Residential Renovation project located at 635 Edmund. This project is funded by Neighborhood Stabilization Program through the The Housing and Redevelopment Authority of Saint Paul, Minnesota. This project is not required to conform to Federal and/or Little Davis Bacon requirements.

1.03 NOTICE TO PROSPECTIVE BIDDERS

A. These documents constitute an invitation to bid to General Contractors for the construction of the project described within this bid manual.

1.04 OWNERSHIP INFORMATION

A. The Owner, The Housing and Redevelopment Authority of Saint Paul, Minnesota, hereinafter, referred to as Owner.

B. Owner's Project Manager: Tchu Yajh
   Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1200
   Phone Number: 651-266-6592
   Email: tchu.yajh@ci.stpaul.mn.us

1.05 OWNER'S CONSULTANT(S)

Owner's Project Specification Consultant: Lunning Wende Associates, Inc.

1. Specification Writer's Name: Robert Lunning
2. Address: 275 East Fourth Street, Suite 620, Saint Paul, MN 55101
3. Phone Number: 651.221.0915 or 651.587.5567
   Email: bob@lunningwende.com

A. Owner's Construction Manager Consultant: CPMI

1. Project Manager's Name: Steve Terman
2. Address: 3265 Northwood Circle, Suite 170, Eagan, MN 55121
3. Phone: 952-854-3663
4. Email: sterman@cpmi.com

1.06 IMPORTANT BID DATES

A. Bids Issued: 07/27/2012

B. Mandatory Pre-Bid Site Tour: Insert 08/3/2012 from 9:00 am to 10:30 am

C. **BID DUE DATE ON OR BEFORE:** 08/17/2012 no later than time 2:00 PM local time.

D. Bid Delivery Location: The offices of The Housing and Redevelopment Authority of Saint Paul, Minnesota
   Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
   Suite: 1100

E. Public Bid Opening and Location: The Housing and Redevelopment Authority of Saint Paul, Minnesota
   Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100

Suite: 1100
Time: 2:15 pm, 08/17/2012.

F. Executed Contract: Within 30 days of the bid award.

G. Construction Start Date (Approximate): ASAP after contract execution

H. Construction Completion Date: 120 days from the time of issued Notice to Proceed.

END OF BID INVITATION

SECTION 00 4003

HRA INSTRUCTIONS FOR BIDDERS

PART 1 GENERAL BID DIRECTIONS

1.01 Each Bidder shall fully inform him / herself and any subcontractors prior to bidding as to all existing conditions and limitations including compliance requirements under which the work is to be performed and shall include in the bid a sum to cover the cost of all items necessary to perform the work as set forth in the Bid Project Manual. The submission of a bid shall be construed as conclusive evidence that the Bidder has made such examination.

1.02 Bid Forms

A. The Bid Submission forms are available online at http://www.stpaul.gov/nsp.

B. Each bid must be submitted on the Bid Submission forms identified in the provided checklist. It is expected that the Contractor retain a copy of their entire submittal for their records. The copy of the bid submitted must be signed at every place that a signature is requested.

1.03 Corrections

A. Erasures or other changes in the bid must be dated and initialed over the signature of the bidder.

1.04 Bid Envelope

A. Place bid in envelope with the contractor name and address in the upper left-hand corner as the return address, and list the property address in the middle of the envelope as the addressee. Seal envelope.

1.05 Interpretations of Scope of Work

A. Every request for an interpretation shall be in writing, unless otherwise documented by the Specification Writer. Questions will be taken until 3 days before bids are due.

B. Interpretations will be in the form of an addenda which will be on file at the website, and in the offices of the Specification Writer at least three calendar days before bids are opened.

C. It shall be the bidder's responsibility to make inquiry as to addenda issued.
   1. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda.

1.06 Conflict with Documents

A. When a conflict arises between the Drawings or the Scope of Work, the Drawings shall govern.

1.07 Materials Approved:

A. Where items of equipment and material are specifically identified herein by a trade name, model or catalog number, only such specified items may be used in the base bid.

B. Contractors desiring approval of substitute products may submit data cut sheets and product information for approval during the bidding cycle.

C. Contractors will be notified only by addendum of additional approved products.

D. Material identifications made in work specifications are considered as minimal quality for acceptance in bidding and installation.

1.08 Allowances:

A. The Contractor shall include in the bid proposal the cash allowances listed.

B. Unless otherwise indicated, the lump sum amount shall be for the material / product.

C. Labor to install the material / product must be submitted separately.

1.09 Alternates:

A. The Contractor must submit bids for each alternate listed in the Alternates List.

B. If pricing is not listed for Alternates the bid may be disqualified.

1.10 Time for Receiving Bids:

A. Bids are to be delivered to the HRA's office.

B. Bids received prior to the time of opening will be securely kept.

C. Bids received by phone or fax will not be considered.

D. Modification of bids already submitted will be considered if received prior to the hour set for receiving the bids and written confirmation of such modification - with the signature of the bidder - is placed in the mail and postmarked and / or delivered to the HRA prior to the time set for bid opening.

1.11 Opening of Bids:

A. At the time and place fixed for the opening of bids, every bid received within the time fixed for receiving bids will be opened irrespective of any irregularities.

B. The opening of the bids will be an "open process" (open to the public).

1.12 Withdrawal of Bids:

A. Bids may be withdrawn in writing, by phone, or by fax prior to the time fixed for opening; provided that written confirmation of any phoned or faxed withdrawal is placed in the mail and postmarked and / or delivered prior to the time set for bid opening.

B. Negligence on the part of the bidder in preparing their bid confers no right of withdrawal or modification of his bid after such bid has been opened.

PART 2 BID ANALYSIS PROCESS

2.01 Contractor Selection Date: Earliest Practical Date

A. This project is funded by the Neighborhood Stabilization Program (NSP), a federal stimulus program created to rehabilitate vacant housing or construct new housing on vacant lots within targeted areas of the City of Saint Paul.

B. The Housing and Redevelopment Authority of Saint Paul, Minnesota reserves the right to check the qualifications of contractors for each project; previous experience working on projects with the The Housing and Redevelopment Authority of Saint Paul, Minnesota, will not automatically deem a contractor qualified.

2.02 Minimum Contractor Qualifications

A. Please note the following minimum qualifications that apply to all bidders:

1. **Quality Workmanship and Qualifications**
   a. Three references from jobs with similar work (include on Contractor Qualification form)
   b. Two financial references (included on Contractor Qualification Form)
   c. At least 2 years of experience as a General Contractor (HRA will verify)
   d. Review of standing with Secretary of State, Federal Excluded Parties list, City of Saint Paul Debarment list, Department of Labor and Industry, Better Business Bureau (HRA will verify)
   e. Houses with historic features or located within a historic district may require demonstration of quality workmanship for historic renovation at the discretion of HRA staff.
2. **Financial Capacity**
   a. Demonstrated ability to pay two months of construction costs for each project awarded (these amounts are added together if more than one project is under construction). Financial capacity documentation must be in the name of the General Contractors organization or the principal of that organization.
      1) For a 120 day project, the contractor shall demonstrate the ability to pay 50% of bid amount.
      2) For a 90 day project, the contractor shall demonstrate the ability to pay 65% of the bid amount.
      3) Demonstration of capacity can be in the form of:

(a) Line of credit from banking or lending institution
(b) Cash balances from banking or lending institution

3. **Ability to Perform**
   a. Up-to-date submittals to Affirmative Action, Section 3, and Vendor Outreach programs.
   b. Adherence to timelines confirmed from professional references.
   c. Use of certified subcontractors for environmental remediation including:
      1) Insulation: contractor must be on Xcel Energy approved contractor list
      2) Asbestos: contractor must be certified for asbestos removal by the State of Minnesota
      3) Lead: either general contractor or subcontractor must be certified for lead abatement by the State of Minnesota
      4) Radon: contractor must be on Minnesota Department of Health approved radon mitigation list.
4. **Bid Award Policy**
   a. Contractors that meet the criteria for qualification above, yet have not worked with The Housing and Redevelopment Authority of Saint Paul, Minnesota on a Neighborhood Stabilization Program project previously will initially be awarded one house, even if the contractor is low bidder for more than one house.
   b. Once the contractor demonstrates quality workmanship, financial capacity, and ability to perform timely completion, they may be awarded more than one house at the same time for subsequent bids on a case-by-case basis.
5. **Other Qualifications**
   a. Each property has its own unique characteristics and challenges. Variables include items relating to environmental conditions, historic nature of structures, etc.
   b. Depending on the specific property , there may be other qualifications needed by the bidder which will be specified by the HRA in its request for bids.

PART 3 POST AWARD REQUIRMENTS

3.01 CONSTRUCTION CONTRACT REQUIRMENTS

A. The bidder agrees that, if selected by the HRA, the bidder will enter into a contract with the HRA no later than 30 calendar days from bid award and will submit the following information to the HRA as a condition to entering into that contract; refer to Bid Rehab Manual for attachments:
   1. Certificates of Insurance as required by the Construction Contract and proof of Insurance and Bonding.
   2. Final Sworn Construction Statement Affidavit and Sworn Construction Statement that list contractors, material suppliers, and subcontractors, who will work under the contract and the cost of their work.
   3. Proof of a valid license as a Residential builder in the State of Minnesota and proof of valid licenses as required by the City of Saint Paul for work to be done.
   4. Bidders may be required to submit payment and performance bonds as a condition of the construction contract.
   5. Proof of compliance with requirements attached for Affirmative Action, Vendor Outreach Program, and Section 3, including an Acknowledgement and Final Section 3 Action Plan.
   6. Construction Schedule must be submitted to the CPMI, to enter into the Contract.

B. Attendance of a Pre-Construction Conference
   1. The selected Contractor and all Subcontractors will be required to attend a Pre-Construction Conference.
   2. Time, date, and place of the Pre-Construction Conference will be announced by CPMI, and/or HRA.

C. Computerized System for Compliance Tracking and Reporting:
   1. The Contractor is required to use the B2Gnow/LCPtracker reporting system. Refer to attachment.

PART 3 WAGE REQUIREMENTS

4.01 The following are wage requirements associated with this Projects

A. Federal Davis-Bacon and/or Little Davis-Bacon Wages are not required for this project.

END OF SECTION

SECTION 00 4101

HRA BID SUBMISSION DOCUMENTS

SECTION 1 GENERAL

1.01 BID SUBMISSION DOCUMENTS, located at http://www.stpaul.gov/nsp

A. Bid Submittal Checklist

B. Bid Cover Sheet

C. Bid Proposal and Non-Collusive Affidavit

D. Preliminary Section-3 Action Plan

E. Contractor Application / Statement of Qualifications

F. Itemized Cost Breakdown and Scope of Work Bid (Section 004102)

END OF SECTION

SECTION 00 4102

HRA LINE ITEM BID SHEET

PART 1 MANUAL BID SHEET - LINE ITEM BREAKDOWN OF WORK

DIVISION 01 – GENERAL REQUIREMENTS	$_____
DIVISION 02 - EXISTING CONDITIONS	
024100 - Demolition	$_____
028200 - Asbestos Remediation	$_____
028500 – Radon Mitigation	$_____
028313 - Lead Hazard Control Activities	$_____
DIVISION 03 - CONCRETE	
030100 - Maintenance of Concrete	$_____
033000 - Cast in Place Concrete	$_____
DIVISION 04 - MASONRY	
040100 - Maintenance of Masonry	$_____
041000 – Concrete Masonry	$_____
042300 - Glass Unit Masonry	$_____
DIVISION 05 – METALS	
057300 – Decorative Metal Railings	**$**_____
DIVISION 06 - WOOD, PLASTICS AND COMPOSITES	
061000 - Rough Carpentry	$_____
062000 - Finish Carpentry	$_____
DIVISION 07 - THERMAL AND MOISTURE PROTECTION	
072119 - Foamed-In-Place Insulation	$_____
072126 - Blown Insulation	$_____
072500 - Weather Barriers	$_____
072700 - Air Barrier System	$_____
073113 - Asphalt Shingles	$_____
074633 - Plastic Siding	$_____
076200 - Sheet Metal Flashing and Trim	$_____
077123 - Manufactured Gutters and Downspouts	$_____
DIVISION 08 - OPENINGS	
081100 - Exterior Insulated Metal Doors and Frames	$_____
081429 - Wood Doors	$_____
082550 – Attic Access Stair	
083323 - Overhead Garage Door	$_____
085313 - Vinyl Windows	$_____
DIVISION 09 - FINISHES	
090120 - Repair of Plaster and Gypsum Board	$_____
090160 - Hardwood Flooring Restoration	$_____
092116 - Gypsum Board Assemblies	$_____

093000 - Tiling	$_____
099000 - Painting and Coating	$_____
099723 - Concrete and Masonry Coatings	$_____
DIVISION 10 - SPECIALTIES	
105623 - Closet Storage Shelving	$_____
DIVISION 11 - EQUIPMENT	
113100 - HRA Residential Appliances	$_____
DIVISION 12 - FURNISHINGS	
121110 - HRA Mail Box and House Numbers	$_____
121111 - Bathroom Furnishings	$_____
123530 - Residential Casework	$_____
DIVISION 22 - PLUMBING	
223000 - Plumbing Equipment	$_____
224000 - Plumbing Fixtures	$_____
DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING	
230000 – Residential Ventilation	$_____
235214 – Gas-Fired Ultra Efficient Boiler	$_____
DIVISION 26 - ELECTRICAL	
261001 - Power, Wiring and Devices	$_____
265101 - HRA Lighting	$_____
DIVISION 28 - ELECTRONIC SAFETY AND SECURITY	
281600 - Intrusion Detection	$_____
DIVISION 31 - EARTHWORK	
312200 - Grading	$_____
DIVISION 32 - EXTERIOR IMPROVMENTS	
321313 - Concrete Paving	$_____
323129 – Wood Fences and Gates	$_____
329223 - Sodding	$_____
329300 - Planting	$_____
TOTAL FOR DIVISIONS 1 - 32	$_____

END OF SECTION

SECTION 01 0010

HRA GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 CONTRACTOR'S RESPONSIBLITY

A. All labor, material, supplies, tools, or other costs or items needed for complete construction of the project, including permits, temporary facilities, safety, security and utilities during construction, are the responsibility of the Contractor.

B. The General Contractor and each Subcontractor shall inspect the existing conditions that affect its work before starting. Commencing work signifies acceptance of the previous work. All measurements and dimensions indicated in the Drawings and Specifications are to be verified prior to bid submittal and construction.

C. The General Contractor shall be responsible for the coordination of all subcontractors working on, or furnishing material for use on this project. In addition, the General Contractor shall be responsible for the coordination of all work performed under separate contracts.

1.02 CONTRACTOR'S USE OF PREMISES

A. During the construction period the General Contractor and its Subcontractors shall have full use of the premises for construction operations, including use of the site. All use of the site shall be under control and supervision of the General Contractor.

B. General Contractor and its Subcontractors will be limited to construction work between the hours of 7:00 am and 6:00 pm on weekdays and 8:00 am to 4:00 pm on Saturday. Work at any other times will be allowed only with the Owner's and Project Manager's consent.

1.03 MATERIALS & MATERIAL STORAGE

A. The General Contractor shall provide all materials, hardware, and fixtures required to accomplish the Scope of Work, unless otherwise indicated.

B. The General Contractor shall use materials specified throughout unless approved in writing by Owner and Project Manager before ordering and installing.

C. The General Contractor is responsible for verification of all measurements. Materials transported to the job site and stored are the General Contractor's responsibility until installed and accepted by the Owner and Project Manager.

D. The General Contractor shall deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

E. Damaged or stolen materials and equipment must be replaced as part of the work at no additional cost to the Owner. Damaged property that is removed shall belong to the General Contractor, unless otherwise stated in writing.

PART 2 PERFORMANCE REQUIRMENTS

2.01 ENERGY CONSERVATION

A. General
   1. This property must go through Xcel Energy's Home Performance with Energy Star program.
   2. This means that all insulation and HVAC work must be performed by Xcel Energy's approved contractor list.
   3. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be held responsible for all work completed.
   4. The "Specifications for Energy Improvement Upgrades" provided by the Neighborhood Energy Connection (See appendix) are a part of the Scope of Work for this property.
   5. Any discrepancies between the Scope of Work and NEC's specifications are to be clarified during the bid process.

B. Provide an Energy Efficient Lighting
   1. All fixtures should have energy efficient CFLs or LED lamps that are within the maximum wattage allowable.
   2. The Owner and Project Manager shall select specific locations of fixtures and switches in each area.
   3. All lighting fixtures will be purchased new, unless otherwise indicated in the scope of work.
   4. No plastic lighting fixtures are acceptable.
   5. No fluorescent tube light fixtures are acceptable in living spaces.
   6. Provide light bulbs for all fixtures. All light fixtures are to have color corrected bulbs. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
   7. Provide and install lighting fixtures and switches.
   8. Review fixtures with Owner and Project Manager prior to installation.
   9. All electrical outlets and cover plates are to be replaced throughout the building, unless otherwise indicated in the scope of work.

2.02 ENERGY EFFICIENT APPLIANCES

A. All appliances must be purchased new and be Energy STAR certified or high efficiency models when Energy STAR certification is not possible.

B. High-efficiency appliances meet the following standards:
   1. Clothes washers must have a CEE Tier 2 or higher, a minimum Energy Factor of 2.0 or greater, and a water factor 6.0 or less.
   2. Clothes Dryers must be a minimum 7.0 cubic feet capacity, have a sensor dry system, and have 5 Temperature Levels - High, Medium High, Medium, Low & Ultra Low
   3. Dishwashers must be CEE Tier 2 or higher, with a minimum Energy Factor of 0.68 or greater, and a maximum annual energy use of 325 kilowatt-hours or less.

2.03 LOW FLOW PLUMBING FIXTURES

A. New plumbing fixtures should be water conserving fixtures with a faucet flow rate of 2.0 GPM or less and a commode flush rate of 1.3 GPF or less.

PART 3 PRICE AND PAYMENT PROCEDURES

3.01 SCHEDULE OF VALUES

A. Form to be used: Sworn Construction Statement.

B. Forms filled out by hand will not be accepted.

3.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Execute certification/pay application by signature of authorized officer.

C. Submit two copies of each Application for Payment to Construction Manager.

PART 4 CONTRACT MODIFICATION PROCEDURES

4.01 HRA WINTER WORK POLICY

A. The Housing and Redevelopment Authority of the City of St. Paul (HRA) recognizes that there are weather related exterior items that cannot be completed in winter conditions (“Weather Conditional Work”), including but not limited to:
   1. Exterior painting
   2. Sod
   3. Foundation plantings
   4. Rain garden installation
   5. Concrete sidewalks, steps, landings, curbs, garage slabs, and asphalt driveways

B. The HRA defines winter conditions as “temperatures consistently below a high of 50 degrees Fahrenheit”. Winter conditions are typically in effect from November 15th through April 15th

each year, although there is potential for an earlier or later start and end date depending on weather.

C. In the case of NSP homes where a notice to proceed is issued between October and February, the time parameter of winter conditions could mean that the entire timeline for construction completion (typically 90-120 days) is within winter conditions.

D. It is the responsibility of the contractor to communicate, to the Owner, the exterior line items in the scope of work that are Weather Conditional Work as a component of the timeline submission required prior to issuance of a notice to proceed.

E. Contractors are also responsible for ensuring that all Weather Conditional Work is completed within the manufacturer's or industry standards recommended temperature range.

F. The Contractor is responsible for prioritizing Weather Related Work when winter conditions are not present, in order to complete the house within the construction timeline whenever possible.

G. The HRA's objective is to ensure that remodeling work on NSP projects is substantially complete within the timeline for construction completion (90-120 days) so that the project can be issued a certificate of occupancy and sold to a new homeowner; the contractor is responsible for ensuring that temporary, structurally sound solutions are implemented when Weather Related Work will effect the ability to secure a Certificate of Occupancy.

H. In the event that winter conditions are present throughout the 120 day construction contract period, the HRA will escrow 1 and 1/2 times the cost for Weather Conditional Work (150%), to be completed within 30 days of the end of winter conditions.

4.02 SUBSTITUTIONS

A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the General Contractor after award of the Contract are considered to be requests for substitutions.

B. Submit requests according to procedures required for change-order proposals.

C. Substitution requests shall include a complete list of changes or modifications needed in the Scope of Work in order to accommodate the proposed substitution.

D. Provide samples and product data, including drawings and descriptions of products as well as fabrication and installation procedures, where applicable or where requested by the Owner or Project Manager.

E. Indicate the substitution's effect on the Contractor's Construction Schedule, if any. Indicate cost information, including a proposal of the net change, if any, in the Contract Sum. Acceptance will be in the form of a written Change Order signed by the Owner and Project Manager.

PART 5 COMPLIANCE INFORMATION AND REQUIRMENTS

5.01 See HRA NSP website for compliance requirments.

A. http://www.stpaul.gov/nsp

B. Review the document labeled: *Section II - Compliance Information and Requirments.*
   1. It contains additional information on:
      a. Insurance
      b. B2Gnow/LCP Tracker, Contract Compliance Monitoring System
      c. Vendor Outreach Program
      d. Affirmative Action
      e. Sustainable Green Policy
      f. Section 3
      g. Two Bid Policy
      h. Limited English Policy
      i. Xcel Energy Participating Contractors' List
      j. Radon Mitigation Contractors' List

5.02 SECURITY PROCEDURES

A. General Contractor is responsible for maintaining security of the site, including:
   1. locking buildings at the end of each work day;
   2. boarding window or door openings;
   3. installing security fencing;
   4. providing temporary barricades, bracing or railings;
   5. and any other work or facilities necessary to maintain a safe and secure site, including compliance with all health, safety, building, and other codes and laws.

B. Any tools or materials or other property stored on the site prior to installation are the responsibility of the General Contractor and its Subcontractors are responsible for insuring their own such property against loss by theft or other cause.

5.03 JOB CONDITIONS

A. The General Contractor shall notify the Owner and Project Manager of repair not covered in the Scope of Work that is necessary for satisfactory completion of the Project.

B. Defects that become evident as work progresses shall be reported not concealed.

C. Ensure safe passage of all employees during the course of demolition or other persons as necessary by erecting barriers, bracing, or other temporary supports as required.

5.04 SAFETY AND CLEAN UP

A. The General Contractor must keep the site clean at all times during construction.

B. In no event can debris be stored outside overnight unless it is inside a dumpster.

C. All floors are to be picked up and kept broom clean at the end of the work day.

D. No combustible debris shall be thrown, stored, or burned on the property, adjacent parcels, sidewalks, streets, or alleys.

E. Debris created from work at the property must be disposed of immediately.

F. Any debris caused by the General Contractor or its Subcontractor shall be removed from the work area in the General Contractor's containers and disposed of off site by the General Contractor.

PART 6 SPECIAL PROCEDURES

6.01 ASBESTOS ABATEMENT,

A. If asbestos is found on this project follow the necessary requirements for proper abatement. A contractor must be licensed by the Minnesota Department of Health to perform asbestos-related work. Asbestos-related work includes the work area preparation, enclosure, removal, or encapsulation of asbestos-containing material.

6.02 LOW VOC, see section 01 6116

6.03 LEAD BASED PAINT

A. General Information
   1. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance".
   2. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulation requirements.
   3. All projects recieving over $25,000 of HUD funds per unit for rehabilitation, must abate all Lead-based paint hazards.

B. **Removal Procedures**
   1. Risk Assessments:
      a. A Risk Assessment must be completed by a licensed Lad-Based Paint Risk Assessor on all properties built before 1/1/78 (excluding emergency rehab cases).
      b. The Owner or Project Manager arranges and pays for the Risk Assessment.

c. The Risk Assessment report will summarize the nature and scope of known lead-based paint hazards.

C. Scope of Work: The Project Manager prepares the Scope of Work incorporating lead hazard reduction work based on the Risk Assessment report.

D. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed Lead Abatement Supervisors are allowed to bid on projects involving lead hazard reduction work.

E. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Owner and Project Manager. It shall include:
   1. Start-up date and how long the project is expected to last.
   2. Areas to be abated and precautions to take.
   3. A warning to pay attention to the caution signs that are posted by the General Contractor around the project site.
   4. Location of areas that may be restricted.

F. The selected General Contractor performs the work, using lead hazard control measures where indicated in the Scope of Work.

G. The General contractor will notify the Project Manager when work is complete.

H. A Clearance Test for lead-based paint dust is required upon completion of the Lead Based Paint Hazard Reduction Project Plan.
   1. The Clearance Test must be performed by a State licensed Clearance Examiner.
   2. It is the responsibility of the General Contractor to arrange and pay for any and all of the Clearance Tests that may be required. If the Clearance Test indicates lead levels lower than acceptable amounts, the General Contractor's lead reduction and control work is complete and the final construction payment application may be processed.
   3. If the Clearance Test is found to contain lead levels above an acceptable amount, the General Contractor must clean the work area again and request another Clearance Test at no additional cost to the Owner, until the Clearance Test is passed.
   4. The Final payment application will not be processed until all areas are determined to be free of hazardous lead levels.

I. Additional Information:
   1. General Contractor must obtain and review the following documents, which provide more detailed information on lead paint hazards and reduction and control measures:
      a. Minnesota Department of Lead program, "Safely Working with Lead While Remodeling the Older Home" pamphlet series. 1-651-215-0890.
         1) U.S. Environmental Protection Agency, "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers, and Schools" 21 page booklet. <http://www.epa.gov/lead/pubs/rrpamph.pdf>
         2) U.S. Department of Housing and Urban Development, "Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work:". English and Spanish versions available. <http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/healthyhomes/lead>
         3) U.S. Department of Housing and Urban Development, "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing". October 1996. <http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/lbp/hudguidelines>
         4) U.S. Environmental Protection Agency, "Model Lead-Based Paint Abatement Worker Training Course." English and Spanish versions available. <http://www.epa.gov/lead/pubs/abateworker.htm>
         5) U.S. Environmental Protection Agency, "Lead Safety for Renovation, Repair, and Remodeling: Student Manual". <http://www.epa.gov/lead/pubs/rrp_8hr_studentmanual_feb09.pdf>

J. Abatement:
   1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
   2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.
   3. Enclosure: The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
   4. Encapsulation: The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
   5. Soil Removal: The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.
   6. Soil Cultivation: The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.
   7. Paving: The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

6.04 WASTE MANAGEMENT, see section 01 7419

PART 6 SUBMITTALS

7.01 GENERAL

A. Coordinate preparation and processing of submittals with performance of construction activities.

B. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

C. Provide the following submittals required for performance of the Work, including the following:
   1. Administrative Submittals.
   2. Construction Schedule
   3. Samples/Product Data.

7.02 ADMINISTRATIVE SUBMITTALS

A. Provide as required in the Contract Documents. Such submittals include, but are not limited to, the following:
   1. Sworn Construction Statement
   2. Required permits.
   3. Applications for Payment.
   4. Insurance certificates.
   5. List of subcontractors.

7.03 CONSTRUCTION SCHEDULE

A. A construction schedule must be submitted to the Owner and Project Manager with the bid, unless requested otherwise in writing. Construction shall be completed within 120 days of notice to proceed.

7.04 SAMPLES/PRODUCT DATA:

A. Submit Samples as specified to be physically identical with the material or product proposed.

B. Samples include partial sections of manufactures or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.

C. Provide product samples and/or product data for the following where included in the scope of work and for any other requirements mentioned in the specifications or drawings:
   1. Paint colors.
   2. Masonry and mortar color samples.
   3. Windows.
   4. Doors and hardware.
   5. Bathroom accessories.
   6. Kitchen cabinets.
   7. Plumbing fixtures.
   8. Lighting fixtures.
   9. Foundation waterproofing.
   10. Stair railings.
   11. Tile.
   12. Carpet.
   13. Interior trim samples.
   14. Exterior trim and siding samples.

END OF SECTION

SECTION 01 2000

PAYMENT PROCEDURES

PART 1 GENERAL

1.01 PAYMENT DOCUMENTS

A. All documents required to create a complete Payment Application can be downloaded from https://sites.google.com/site/nspconstructiondocs/

B. Payment Application form to be used: Application and Certificate for Payment provided by the HRA.
   1. Columns A, B, C should not change during the course of construction and should directly relate to the Sworn Construction Statement provided at the start of construction. As draws progress, columns D, E and F change to reflect work completed.

C. Additional Documents to be submitted with each pay application:
   1. Monthly Employment Utilization (MEU) Form
   2. Identification of Prime and Subcontractor Form
      a. An updated Sub ID sheet must be attached to help HR/EEO staff track subcontractor utilization.
   3. B2Gnow
      a. Ensure each subcontractor is logging into the B2Gnow system and logging payments received.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement. The Owner will process the payment within 30 days.

B. Applications for payment must be signed by an authorized officer of the general construction firm.

C. Use data from approved Sworn Construction Statement. Provide dollar value in each column for each line item for portion of work performed.

D. Submit one signed copy of the Application for Payment, complete with all required attachments, to the Construction Manager.

E. Forms filled out by hand will not be accepted.

1.03 MODIFICATION PROCEDURES

A. For minor changes not involving an adjustment to the Contract Price or Contract Time, Construction Manager will issue instructions directly to Contractor.

B. Execution of Change Orders: Construction Manager will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

C. After execution of Change Order, promptly revise Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
   1. Change orders shall be listed as lump sumps on the bottom of the pay application and refered to on the cover sheet.
   2. Include each line item of the change order as a separate line item in the pay application and the amount of the contractor adjustments.

1.04 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.

B. Additional documents:
   1. Final lien waivers from all subcontractors/material providers
   2. Monthly Employment Utilization (MEU) Form
   3. Project Employment Utilization (PEU) for City Funded Projects
   4. Lead Clearance

5. NEC Certificate of Completion
6. Waste Management Plan Report
7. Permit Sign-offs/Certificate of Code Compliance
8. Winter Work/Weather Related Work Escrow
9. Certificate of Substantial/Final Completion

C. See Section 01 7700 - Closeout Procedures and Submittals, for additional information.

END OF SECTION

SECTION 01 2300
ALTERNATES

PART 1 GENERAL

1.01 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.02 SCHEDULE OF ALTERNATES

A. Alternate One: In lieu of providing and installing Tile Flooring (Section 09 3000) in the Kitchen, restore existing hardwood flooring in Kitchen (Section 09 0160).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

D. Substitution Submittal Procedure:
   1. Submit two copies of request for substitution for consideration. Limit each request to one proposed substitution.
   2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   3. The Construction Manager will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

SECTION 01 6116

VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SUMMARY

A. Implement the following procedures in an effort to improve indoor air quality during Owner's occupancy.

B. Construction Indoor Air Quality (IAQ) Management
   1. Provide low-emitting products

1.02 DEFINITIONS

A. VOC-Restricted Products: All products of each of the following categories when installed or applied on-site in the building interior:
   1. Adhesives, sealants, and sealer coatings.
   2. Carpet.
   3. Carpet cushion.
   4. Resilient floor coverings.
   5. Wood flooring.
   6. Paints and coatings.
   7. Insulation.
   8. Gypsum board.
   9. Acoustical ceilings and panels.
   10. Cabinet work.
   11. Wall coverings.
   12. Composite wood and agrifiber products used either alone or as part of another product.
   13. Other products when specifically stated in the specifications.

B. Interior of Building: Anywhere inside the exterior weather barrier.

C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

PART 2 PRODUCTS

2.01 MATERIALS

A. All VOC-Restricted Products: Provide products having VOC content of types and volume not greater than those specified in State of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions From Various Sources Using Small-Scale Environmental Chambers.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Current GREENGUARD Children & Schools certification; www.greenguard.org.
      b. Current Carpet and Rug Institute Green Label Plus certification; www.carpet-rug.org.
      c. Current SCS Floorscore certification; www.scscertified.com.
      d. Current SCS Indoor Advantage Gold certification; www.scscertified.com.
      e. Product listing in the CHPS Low-Emitting Materials Product List at www.chps.net/manual/lem_table.htm.
      f. Current certification by any other agencies acceptable to CHPS.
      g. Report of laboratory testing performed in accordance with CHPS requirements for getting a product listed in the Low-Emitting Materials Product List; report must include laboratory's statement that the product meets the specified criteria.

B. Adhesives and Joint Sealants: Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168.
   1. Evidence of Compliance: Acceptable types of evidence are:

a. Report of laboratory testing performed in accordance with requirements.
b. Published product data showing compliance with requirements.
c. Certification by manufacturer that product complies with requirements.

C. Aerosol Adhesives: Provide only products having volatile organic compound (VOC) content not greater than required by GreenSeal GS-36.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current GreenSeal Certification.

D. Paints and Coatings applied within building waterproof envelope:
1. Comply with VOC Content limits (as noted in Criterion 6.1) of Green Seal Standard GS-11 "Paints," First Edition; Standard GC-03 "Anti Corrosive Paints," and MPI GPS-2-8, as follows (in grams/Liter):
a. Flat: 50
b. Non-flat: 50
c. Anti-Corrosive and Anti Rust: 250
d. Floor Coatings: 100

E. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current Green Label Plus Certification.
b. Report of laboratory testing performed in accordance with requirements.

F. Carpet, Carpet Cushion, and Adhesive: Provide products having VOC content as specified in Section 09 6800.

G. Carpet Cushion: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current Green Label Plus Certification.
b. Report of laboratory testing performed in accordance with requirements.

H. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current SCS "No Added Urea Formaldehyde" certification; www.scscertified.com.
b. Published product data showing compliance with requirements.
c. Certification by manufacturer that product complies with requirements.

I. Other Product Categories: Comply with limitations specified elsewhere.

PART 3 EXECUTION

3.01 GENERAL

A. Incorporate procedures and processes during construction and prior to occupancy as described herein

END OF SECTION

SECTION 01 7000

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

D. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Construction Manager of any discrepancies discovered.

C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

3.02 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.03 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.

6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-conforming work.

C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

D. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

3.04 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

3.05 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.06 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

3.07 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Review Section 01 7700 CLOSEOUT PROCEDURES AND SUBMITTALS.

C. Notify Construction Manager when work is considered ready for Substantial Completion.

D. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Construction Manager's review.

E. Notify Construction Manager when work is considered finally complete.

F. Complete items of work determined by Construction Manager's final inspection.

END OF SECTION

SECTION 01 7419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. HRA Policy for this project is dependent on diversion of 50 percent, by weight, of potential landfill trash/waste by recycling and/or salvage.

D. The following recycling incentive programs are mandatory for this project; Contractor is responsible for implementation:

1.02 SUBMITTALS

A. ACTION SUBMITALS

1. **CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT(CWM) PLAN**
    a. Analysis of estimated job-site waste to be generated, including types and quantities of compostable, recyclable, and salvageable materials.
    b. Description of means and methods to achieve 50 percent diversion requirement for compostable, recyclable, and salvageable materials, including those that may be donated to charitable organizations.
    c. Identification of the carpet product's composition as polymer, nylon or polypropylene
    d. Identification of recycling contractors and haulers proposed for use in the project and locations accepting construction waste materials or entities providing related services.

B. FINAL WASTE MANAGMENT REPORT: General Contractor is responsible to submit at completion of construction and prior to contract close-out, in electronic format.

1. All information required in Waste Management Progress Reports
2. Legible copies of on-site logs, manifests, weight tickets, and receipts.
3. Final calculations, including total amount (by weight or volume) of diverted construction and demolition waste, and the total amount (by weight or volume) of landfilled waste.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor and Construction Manager.

C. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.

D. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

E. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

F. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

G. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

2.02 UNACCEPTABLE METHODS OF WASTE DISPOSAL

A. Burning or incinerating on or off project site

B. Burying on project site, other than fill.

C. Dumping or burying on other property, public or private, other than official landfill.

D. Illegal dumping or burying.

END OF SECTION

SECTION 01 7700

CLOSEOUT PROCEDURES AND SUBMITTALS

PART 1 GENERAL

1.01 SUBMITTALS

A. All documents required to create a complete Final Payment Application can be downloaded from https://sites.google.com/site/nspconstructiondocs/

B. Notify Construction Manager when work is considered ready for Substantial Completion.
   1. Make sure the work is substantially complete and cleaned for inspection.
   2. Substantial completion is defined as when the Work is sufficiently completed in accordance with the Contract Documents so that the Owner can occupy or utilize the space for its intended use.

C. Substantial Completion Submittals:
   1. Project Record Documents: Submit documents listed below to Construction Manager:
      a. Final Pay Application
      b. Monthly Employment Utilization (MEU) Form
      c. Project Employment Utilization (PEU) for City Funded Projects
      d. Lead-based Paint Hazard Clearance Testing
      e. Energy Modeling/NEC Compliance Report
      f. Final Waste Management Report, see Section 01 7419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
      g. Permit Closeout/Code Compliance
      h. Winter Work/Weather Related Work Escrow
      i. Final Lien Waivers
      j. Material Allowance Reconciliation Change Order (if necessary).

D. Notify Construction Manager when work is considered finally completed. All Punch List items shall be completed and approved by Construction Manager and HRA Project Manager.

E. Final Completion Submittals:
   1. Project Record Documents: Submit documents listed below to Construction Manager:
      a. Building Maintenance Manual and Warranty documents for following:
         1) Appliance and building systems
            (a) HVAC equipment
            (b) Lighting equipment
            (c) Kitchen and Laundry Appliance Manuals
         2) Water-using equipment and controls installed:
            (a) Hot water delivery system(s)
            (b) Toilets
            (c) Faucets
            (d) Shower head(s)
            (e) Dishwasher
            (f) Clothes washer
      b. Signed Certificate of Substantial Completion
      c. Punch List Items Completed

PART 3 EXECUTION

2.01 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

A. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party Clearance Technician from Ramsey County Department of Public Health or other certified testing agency for clearance testing.

2.02 ENERGY MODELING (NEC)

A. Contractor must work with the Neighborhood Energy Connection (NEC) who will:

1. Create an energy model with the building plans and specifications to show the building's projected energy performance in the design stages
2. Conduct a mid-construction pre drywall thermal enclosure inspection
3. Verify the final performance of the building with performance testing

2.03 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

END OF SECTION

SECTION 01 8113

SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 ENERGY CONSERVATION

A. This property must go through Xcel Energy's Home Performance with Energy Star program.
   1. All insulation and HVAC work must be performed by Xcel Energy's approved contractor list.
   2. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be held responsible for all work completed.
   3. General Contractors will be responsible for submitting documentation required of the Home Performance with Energy Star program and will be responsible for achieving Energy Improvements outlined by Neighborhood Energy Connection.
   4. The "Specifications for Energy Improvement Upgrades" provided by the Neighborhood Energy Connection (See appendix) are a part of the Scope of Work for this property.
   5. Any discrepancies between the Scope of Work and NEC's specifications are to be clarified during the bid process.

B. Energy Efficient Lighting
   1. The Owner/Project Manager shall select specific locations of fixtures and switches in each area.
   2. All lighting fixtures will be purchased new, unless otherwise indicated.
   3. No plastic lighting fixtures are acceptable.
   4. No fluorescent tub light fixtures are acceptable in living spaces.
   5. Provide Energy Star certified CFL or LED light bulbs for all fixtures.
   6. All light fixtures are to have color corrected bulbs.
   7. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
   8. Provide and install lighting fixtures and switches.
   9. Review fixtures with Owner prior to installation.
   10. All electrical outlets and cover plates are to be replaced throughout the building.

C. Energy Efficient Appliances
   1. All appliances must be purchased new and be Energy Star certified or high efficiency models when Energy Star certification is not possible.
   2. High-efficiency appliances meet the following standards

1.02 QUALITY ASSURANCE

A. The Neighborhood Energy Connection (NEC), through its Peak Performace Homes custom consulting program, certifies independent consultants who provide developers with specific information about how to increase the energy efficiency of thier buildings.

PART 2 PRODUCTS

2.01 LOW-EMITTING MATERIALS

A. Cabinet Materials: Low VOC
   1. Provide wood cabinets with self closing hinges and adjustable shelves from the Schrock Select (available at Menards), Mid-Continent Cabinetry (available at All Inc), or MINNCOR (available at MINNCOR) design lines or approved equal.
   2. Cabinets are to have plywood sides and bases.
   3. Drawer boxes shall be plywood with dovetail joinery.
   4. Cabinets to be constructed with maple; full overlay doors and flat or 5 piece. Alternative styles may be approval by the HRA.

PART 3 EXECUTION

3.01 CONSTRUCTION WASTE MANAGEMENT

A. Comply with Construction Waste Management and Disposal Plan. Section 01 7419

3.02 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

A. Change all air filters regularly durring construction with filters specified for the specific furnace.
   1. Replace all air filters immediately prior to Substantial Completion with the specified permanent filters.

END OF SECTION

SECTION 02 4100

DEMOLITION

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 3 EXECUTION

2.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Protect hardwood floors for possible refinishing later.
   4. Provide, erect, and maintain temporary barriers and security devices.

B. If hazardous materials are discovered during removal operations, stop work and notify Construction Manager and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

C. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Inform Project Manager of potential strategies to reuse construction material.
      a. Only move forward with reusing of construction materials with Project Manager's consent.

2.02 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

2.03 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.

B. Remove existing work as indicated and as required to accomplish new work.

C. Services (Including but not limited to Site, Building Interior, Building Exterior, HVAC, Plumbing, and Electrical): Remove existing systems and equipment as indicated.

D. Interior Demolition to Include:
   1. Basement/Mechanical – Refer to Drawings.
      a. The heating system: hot water radiation with boiler
         1) Existing radiators to remain.
      b. Radiator piping
      c. Thermostat
      d. Water heater
      e. All water and waste piping
      f. Water damaged gypsum wallboard
      h. Any appliances
      i. Toilet and laundry sink
      j. Non-structural wood framing
   2. Kitchen – Refer to Drawings.
      a. Any appliances
      b. Soffits
      c. Cabinets and counter tops
      d. Tile on walls

e. Gypsum wallboard
f. Chimney to below floor level.
g. Flooring
1) Including subflooring to expose hardwood flooring.

3. Bathroom – Refer to Drawing.
a. Tile on walls and ceilings
b. Gypsum wallboard on walls and ceiling.
c. Tile flooring
1) Including subflooring to expose flooring sheathing.
e. Toilet
f. Pendestal sink

4. Living Room, Foyer and Dining Room– Refer to Drawings.
a. Ceilings
b. Walls, as shown in the Drawings and as required.

5. Bedrooms – Refer to Drawings.
a. Ceiling, as shown in the Drawings.
b. Flooring
1) Including subflooring to expose hardwood flooring.
c. Walls, as shown in the Drawings and as required.

6. Throughout
a. Trim Base, Shoe, Casing, and Crown- retain for reinstallation.
b. Windows, as shown on Drawings
c. Unnecessary hooks, nails, brackets, etc from walls.
d. All non-code compliant issues, including but not exclusively electrical and plumbing.
e. Lighting Fixtures All.
f. Switch plate and receptacle covers All.
g. Carpeting
1) Including padding
h. All shelving
i. Chimney

E. Exterior Demolition to Include:
1. Exterior Building and Garage
a. Refer to Drawings.
b. Brick Chimney.
c. Doors and windows, as shown on Drawings.
d. Fascia and soffit on house.
e. Air conditioning unit.
f. Cable Wiring, TV antennas or cable dishes.
g. Garage overhead door.
h. Garage passage door.

2. Site Demolition:
a. Refer to Drawings.
b. Fence at east and west property lines.
c. Fence at alley.
d. Concrete Sidewalks, as shown on Drawings.
e. Wood retaining wall, as shown on Drawings.

F. Protect existing work and plantings to remain.

2.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Recycle materials, appliances, and products to the extent possible.

END OF SECTION

SECTION 02 8200
ASBESTOS REMEDIATION

PART 1 GENERAL **$_____**

1.01 DESCRIPTION OF WORK AND CONTRACTOR RESPONSIBILITIES

A. Provide all labor, equipment, material supervision and subcontracting for the removal and disposal of all Asbestos-Containing Material (ACM) as specified in the attached Asbestos Test.

B. When work areas include both friable and nonfriable types of ACM, Contractor's shall prepare work area using procedures for friable asbestos removal.

1.02 SUBMITTALS

A. Proof that the Contractor is qualified to perform Asbestos Remediation in the State of Minnesota.

B. Test Reports: Indicate Complete Remediation of Project.

PART 3 EXECUTION

2.01 LOCATIONS

A. Review the Asbestos report, included in this Manual, for locations.

B. Asbestos has been identified in this property.
   1. Friable - Pipe insulation (air cell) in north end of basement—25 lf observed
   2. Friable - Pipe joint insulation (mag) in south end of basement
   3. Friable - Ceiling texture in North Room of 2nd floor—135 sf

C. If uncovered, do not disturb suspicious materials. Contact the Construction Manager.

END OF SECTION

SECTION 02 8313
LEAD HAZARD CONTROL ACTIVITIES

PART 1 GENERAL **$_____**

1.01 GENERAL INFORMATION

A. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance." As a component of **Title X, Sections 1012 and 1013**, rehabilitation projects receiving more than $25,000 of federal funds must abate all lead.

B. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulations.

1.02 PRICE AND PAYMENT PROCEDURES

A. Provide a price for the appropriate methods of abatement required by this scope of work.

1.03 SUBMITTALS

A. Project Plan: The General Contractor must prepare a written project plan and communicate it to the Construction Manager and Project Manager. It shall include:
   1. Start-up date and how long the project is expected to last.
   2. Areas to be abated and precautions to take.
   3. A warning to pay attention to the caution signs that are posted by the General Contractor around the project site.
   4. Location of areas that may be restricted.

B. Test Reports: Indicate Lead Based Paint Clearance.
   1. Submitted at final draw

1.04 QUALITY ASSURANCE

A. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed to conduct lead hazard reduction work are allowed to bid on projects involving lead hazard reduction work. See Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700 for applicable safety precautions, disposal regulations, and other compliance regulations that apply to abatement activities.

PART 3 EXECUTION

2.01 ABATEMENT

A. When the Risk Assessment process determines that a Project contains a lead-based paint hazard, the General Contractor shall comply with the abatement measures defined by HUD in 24 CFR Part 35 Subpart A through R 35.1325

http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/enforcement/lshr

and by the EPA in 40 CFR 745.227(e).

http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-sec745-227.pdf

and lead hazard reduction methods defined in Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700

http://www.health.state.mn.us/divs/eh/lead/rule.html

   1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
   2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great

deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.

3. Enclosure: The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
4. Encapsulation: The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
5. Soil Removal: The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.
6. Soil Cultivation: The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.
7. Paving: The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

2.02 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

A. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party risk assessor from Ramsey County Department of Public Health or other certified testing agency for clearance testing.

B. The Clearance Technician will conduct a visual assessment of completed work, take dust samples, have dust samples analyzed, and prepare a Clearance Report.

C. If sample results fail, Minnesota rules 4761.2670 subpart 2 and subpart 3 must be repeated. If test results of samples fail to meet clearance standards, surfaces must be retreated or recleaned at no additional cost to the Owner until clearance standard is met.

D. When the Clearance Report indicates that clearance standards have been met, and all other requirements of this section have been met, the Construction Manager and Owner will approve the final pay application.

2.03 LOCATIONS

A. Review Lead Report, attached in this Manual. Locations identified in the lead report are defined below, with reference to expected finish in other areas of the specification. Contractor is responsible for ensuring treatments meet abatement requirements as defined in federal and state statute. Perform all work in accordance with Lead Safe Work Practices.

1. Porch:
    a. Painted wood door components: Remove coatings to bare substrate and re-coat with lead free coatings. (See Paint 09 9000.)
    b. Painted wood window components: Remove window components to raw opening. (See Demolition 02 4100.)
    c. Painted wood walls, ceiling, baseboard, and upper trim: Encapsulate with an approved lead abatement encapusulant such as Safe Encasement or equivalent and include in an Operation & Maintenance Plan. (See Paint 09 9000.)
    d. Painted wood floor: Remove coatings to bare substrate and re-coat with lead free coatings. (See Paint 09 9000.)
2. Kitchen Cabinet:: Remove painted wood cabinet. (See Demolition 02 4100.)
3. All Painted Wood Interior Doors: Remove (see Demolition 02 4100) and replace (see Wood Doors 08 1429).
4. All Painted Wood Window Components and Baseboards, except Closets: Remove coatings to bare substrate and re-coat with lead free coatings. (See Paint 09 9000.)
5. Baseboard Trim in Closets: Remove (see Demolition 02 4100) and replace (see Finish Carpentry 06 2000)
6. Attic Hatch and Casing: Remove (See Demolition 02 4100.) and replace (See 08 2550.)
7. All Closet Shelving: Remove (See Demolition 02 4100.) and replace (See 10 5623.)
8. All Plaster and Gypsum Board Walls: Remove (see Demolition 02 4100) and stabilize (see Repair of Plaster and Gypsum Board Surfaces 09 0120) or replace (Gypsum Board Installation 09 2116)
9. All Radiators: Remove coating to substrate and re-coat with lead free coatings (see Paint 09 9000).
10. Metal Exterior Door, Window, Soffit and Fascia Trim: Repair and maintain (see Sheet Metal Flashing and Trim 07 6200)
11. Exterior Wood Siding, Exposed Painted Wood Window Sash, Painted Wood Door Components: Stabilize and coat (see Paint 09 9000)
11. Painted Basement Surfaces, including Stone, Brick & Concrete Masonry, and Wood, throughout: Stabilize painted surfaces and re-paint (see Paint 09 9000)
12. Soil: Regrade site (see Grading 31 2200)

END OF SECTION

SECTION 02 8500

RADON MITIGATION

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

A. Contractors: Must be Certified to perform this work and listed by the Minnesota Department of Health.
   1. ://www.health.state.mn.us/divs/eh/indoorair/radon/mitigation.html

B. Verification Testing: Provide testing indicating that mitigation efforts have been successfully implemented.

1.02 SUBMITTALS

A. Radon Mitigation Verification Submittal: Provide test results, including test number, indicating the elimination of radon levels.

1.03 WARRANTY

A. Product should be warranted to reduce indoor radon concentrations to below 4 pCi/L for 5 years.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Active Mitigation System:
   1. Provide a sub-slab or sub membrane depressurization system with an in-line fan.
   2. Fan powered soil depressurization systems shall meet all of the following requirements:
      a. above the eave of the roof
      b. ten feet or more above ground level
      c. ten feet or more from any window, door, or other opening into conditioned spaces of the structure that is less than two feet below the exhaust point
      d. ten or more from any opening into an adjacent building.

2.02 MATERIALS

A. All mitigation system electrical components shall be U.L. listed or of equivalent specifications.

B. All plastic vent pipes in mitigation systems shall be made of Schedule 40 PVC, ABS or equivalent piping material.

C. Vent pipe fittings shall be of the same material as the vent pipes.

D. Sump pit covers shall be made of durable plastic or other rigid material and designed to permit air tight sealing to permit easy removal for sump pump servicing. The cover shall be sealed using silicone or other non-permanent type caulking materials or air tight gasket.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with suggested best practices created by the Minnesota Department of Health, Indoor Air Quality Unit..

B. When installing radon mitigation systems that use sump pits as the suction point for active soil depressurization it is required that submersible sump pumps be installed.

C. <u>All pipe routing shall be located within the structure.</u> If this is absolutely not possible, contact HRA Project manager. In cases where the contractor is unable to determine a run for piping, system shall be installed on the rear elevation, with approval from Project Manager.

D. All joints and connections in radon mitigation systems using plastic vent pipes shall be permanently sealed with adhesives as specified by the manufacturer of the pipe material used.

E. Attic and external piping runs in areas subject to sub-freezing conditions should be protected to avoid the risk of vent pipe freeze-up.

F. Vent pipes shall be fastened to the structure of the building with hangers strapping or other supports that will adequately secure the vent material. Existing plumbing pipes, ducts, or mechanical equipment shall not be used to support or secure a radon vent pipe.
   1. Horizontal Supports: shall be installed at least every 6 feet.
   2. Vertical Supports: shall be installed at least every 8 feet.

G. Radon mitigation fans shall be wired to its own electrical circuit and conform with all codes.

H. All active soil depressurization radon mitigation systems shall include a mechanism to monitor system performance and warn of system failure.

END OF SECTION

SECTION 03 0100

MAINTENANCE OF CONCRETE

PART 1 GENERAL $_____

1.01 SECTION INCLUDES

A. Cleaning of existing concrete surfaces.

B. Repair of exposed structural, shrinkage, and settlement cracks.

C. Resurfacing of concrete surfaces having spalled areas and other damage.

D. Repair of deteriorated concrete.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

A. Detergent: Non-ionic detergent.

2.02 CEMENTITIOUS PATCHING AND REPAIR MATERIALS

A. Cementitious Repair Mortar, Trowel Grade: One- or two-component, factory-mixed, polymer-modified cementitious mortar; dry material complying with ASTM C928/C928M; in-place material capable of withstanding freeze/thaw conditions.

B. Cementitious Hydraulic Waterstop: Very fast setting, low slump, hand formable, and capable of stopping active water leaks; dry material complying with ASTM C928/C928M; in-place material capable of withstanding freeze/thaw conditions.

PART 3 EXECUTION

3.01 CLEANING EXISTING CONCRETE

A. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective.
   1. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage.
   2. Clean out cracks and voids using same methods.

B. The following are acceptable cleaning methods, in order from gentlest to less gentle:
   1. Water washing using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
   2. Increasing the water washing pressure to maximum of 400 psi.
   3. Adding detergent to washing water; with final water rinse to remove residual detergent.
   4. Steam-generated low-pressure hot-water washing.

3.02 CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS

A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.

B. Apply coating of bonding agent to entire concrete surface to be repaired.

C. Apply repair mortar by steel trowel to a minimum thickness of 1/4 inch (6 mm) over entire surface, terminating at a vertical change in plane on all sides.

D. Trowel finish to match adjacent concrete surfaces.

3.03 LOCATIONS

A. Exterior foundation walls.

B. Interior foundation walls.

C. Basement floor.

D. Garage floor.

E. All areas affected by work in Drawings.

END OF SECTION

SECTION 03 3000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL $_____

1.01 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M Grade 40 (280).

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150, Type I - Normal Portland type.

2.04 CONCRETE MIX DESIGN

A. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 psi (20.7 MPa).

PART 3 EXECUTION

3.01 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

3.02 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.03 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

3.04 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 ft (3 m).

B. Correct the slab surface if tolerances are less than specified.

C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.05 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. "Wood float" as described in ACI 302.1R; not used.
   2. "Steel trowel" as described in ACI 301.1R; Sidewalks and ramp.

3.06 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

3.07 LOCATIONS

A. Repair to existing Basement floor, as required, to achieve a continuous and level surface.

B. Plinth Blocks in basement floor to support floor joist/beam support posts, to meet city code.

C. Footings at new Back Deck, as shown in the Drawings.

END OF SECTION

SECTION 04 0100

MAINTENANCE OF MASONRY

PART 1 GENERAL **$_____**

1.01 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 3 EXECUTION

2.01 REBUILDING

A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.

B. Match surrounding materials and surfaces to the extent possible.

2.02 REPOINTING

A. Cut out loose or disintegrated mortar in joints to minimum 1/2 inch (6 mm) depth or until sound mortar is reached.

B. Pre-moisten joint and apply mortar. Pack tightly in maximum 1/4 inch (6 mm) layers. Form a smooth, compact concave joint to match existing.

2.03 CLEANING NEW MASONRY

A. Verify mortar is fully set and cured.

B. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.

2.04 LOCATIONS

A. Basement areas disturbed by the Work or deteriorated areas uncovered by the Work.

END OF SECTION

SECTION 04 2300

GLASS UNIT MASONRY

PART 1 GENERAL **$_____**

1.01 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 GLASS UNITS

A. Hollow Glass Units: Permanently seal hollow unit by heat fusing joint; with joint key to assist mortar bond.

2.02 MORTAR MIXING

A. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.

PART 3 EXECUTION

3.01 INSTALLATION

A. Erect glass units and accessories in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. Basement windows; replace all.

END OF SECTION

SECTION 05 7300

DECORATIVE METAL RAILINGS

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 RAILING SYSTEMS

A. Railings - General: Factory- or shop-fabricated in design indicated, to suit specific project conditions, and for proper connection to building structure, and in largest practical sizes for delivery to site.
   1. Design Criteria: Design and fabricate railings and anchorages to resist the following loads without failure, damage, or permanent set; loads do not need to be applied simultaneously.
      a. Lateral Force: 75 lb (333 N) minimum, at any point, when tested in accordance with ASTM E935.
      b. Distributed Load: 50 pounds per foot (0.73 kN per m) minimum, applied in any direction at the top of the handrail, when tested in accordance with ASTM E935.
      c. Concentrated Loads on Intermediate Rails: 50 pounds per square ft (0.22 per sq m), minimum.
      d. Concentrated Load: 200 pounds (888 N) minimum, applied in any direction at any point along the handrail system, when tested in accordance with ASTM E935.
   2. Assembly: Join lengths, seal open ends, and conceal exposed mounting bolts and nuts using slip-on non-weld mechanical fittings, flanges, escutcheons, and wall brackets.
   3. Joints: Tightly fitted and secured, machined smooth with hairline seams.
   4. Field Connections: Provide sleeves to accommodate site assembly and installation.
   5. Welded and Brazed Joints: Make exposed joints butt tight, flush, and hairline; use methods that avoid discoloration and damage of finish; grind smooth, polish, and restore to required finish.
      a. Ease exposed edges to small uniform radius.
      b. Welded Joints:
         1) Carbon Steel: Perform welding in accordance with AWS D 1.1/D1.1M.
         2) Stainless Steel: Perform welding in accordance with AWS D 1.6.
      c. Brass/Bronze Brazed Joints:
         1) Perform torch brazing in accordance with AWS C3.4/3.4M.
         2) Perform induction brazing in accordance with AWS C3.5/3.5M.
         3) Perform resistance brazing in accordance with AWS C3.9/3.9M

B. Steel and Iron: At round pipe railings and guardrails: 1-1/2" outside diameter pipe with horizontal rails spaced no more than 5-1/2" o.c.. At Square pipe railing and guardrails: 1-1/2" square posts, 1-1/2 X 1/2 top and bottom rails, 1/2" solid square bar vertical pickets spaced 4" on center maximum. Top rails to be 2'10" above stair nosing and extends 12" at top and bottom of stairs.
   1. Finishes: Prepare raw material by "Brush-Off Blast Cleaning". Rust inhibiting alkyd primer (1 coat and flat black finish (2 coats), applied in ship to all exposed surfaces of metal, even if not normally visible.

PART 3 EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's drawings and written instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects and with tight joints, except where necessary for expansion.

C. Anchor posts in concrete by inserting into formed or core-drilled holes and grout space between post and concrete.

D. Anchor handrail ends to concrete and masonry with round flanges connected to rail ends and anchored tow wall construction will drilled in expansion anchors.

E. Anchor securely to structure.

3.02 LOCATIONS

A. Front yard steps anchored to concrete steps.

END OF SECTION

SECTION 06 1000

ROUGH CARPENTRY

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
   2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
   3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Lumber fabricated from old growth timber is not permitted.

C. Provide wood harvested within a 500 mile (805 km) radius of the project site; see Section 01 6000 for requirements for locally-sourced products.

D. Lumber salvaged from deconstruction or demolition of existing buildings or structures is permitted in lieu of sustainably harvested lumber provided it is clean, denailed, and free of paint and finish materials, and other contamination; identify source.

E. Lumber fabricated from recovered timber (abandoned in transit) is permitted in lieu of sustainably harvested lumber, unless otherwise noted, provided it meets the specified requirements for new lumber and is free of contamination; identify source.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry or MC19.

C. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm)):
   1. Grade: No. 2.

D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)

E, Treated Wood Deck

   1. New Deck: 6 by 6 inches, treated wood posts, 2 by 8 inches treated wood joists and rims, 2x treated tongue & groove flooring, 2 by 2 treated wood pickets and 2 by 4 treated wood rails, 6 by 6 treated wood railing cap (slopped top).

F. Treated Wood Posts

   2. Replacement posts in Basement, as required.

E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel per ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
   2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.

B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions. Provide as required for each condition manufactured by Simpson Strong-Tie.
   1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.

C. Porch Post Base: Saddle bracket – RCPS manufactured by Simpson Strong-Tie.

D. Building Paper: Water-resistant Kraft paper.

2.04 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

B. Install structural members full length without splices unless otherwise specifically detailed.

C. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.

D. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.

3.03 INSTALLATION OF CONSTRUCTION PANELS

A. Underlayment: Secure to subflooring with screws and glue.

3.04 LOCATION

A. Back Deck, treated framing lumber; Cedar deck, treads and risers according to drawings.

B. Floor joist support posts, in basement.
   1. Installed after floor leveling.

C. Plinth Blocks (see 03 3000) and Wood Posts in Basement: Provide temporary shoring and bracing. Set new precast plinth block on sound concrete slab or footing, directly under post. Provide shims to maintain post at proper bearing height.

D. Wood Fences and Gates at Backyard (see 32 3129).

E. Exterior Deck and Steps: Install new steps, and appropriate supports, footings, railing and hand railings to meet code requirements.

F. Interior partitions: 2x4 wood studs at 16 inches on center, with continuous 2x4 top and bottom plates.

END OF SECTION

SECTION 06 2000

FINISH CARPENTRY

PART 1 GENERAL **$_____**

1.01 RELATED SECTIONS

A. See Section 09 9000 Painting and Coating, for trim finish and color.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI Architectural Woodwork Standards for Premium Grade.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide wood harvested within a 500mile (805 km) radius of the project site.

2.03 LUMBER MATERIALS

A. Where existing interior door, window, base and cornice trim must be extended or replaced, match the existing trim in wood species, profile, and dimension.

B. Hardwood Lumber: Oak and Maple species, quarter sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.
   1. Flooring: match existing.
      a. Wood species, dimensions, and finish to match surrounds.
      b. Install with end joints staggered to match existing flooring pattern.
      c. Orient floorboards in same direction as existing flooring.
   2. Baseboard system: match existing.
   3. Cornice molding: match existing.
   4. Door and Window Trim: Header, stop, stool, apron and casing: match existing.
      a. Ease all outside edges with 1/16" radius.

2.04 FABRICATION

A. Shop assembly of work for delivery to site is allowed, permitting passage through building openings.

2.05 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. Touch up finish on existing wood trim and match new trim finish to existing.

D. Finish work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards, Section 5 - Finishing for Grade specified and as follows:

PART 3 EXECUTION

3.01 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Use finish nails of sufficient length to penetrate framing 1".

D. Mitre all lap joints, and break all lap joints over framing.

E. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim to conceal larger gaps.

F. Where existing interior door, window, base and cornice trim must be extended or replaced, match the existing wood

G. Install flooring to match existing.
   1. Wood species, dimensions, and finish to match surrounds.
   2. Install with end joints staggered to match existing flooring pattern.
   3. Orient floorboards in same direction as existing flooring.

3.02 LOCATIONS

A. Reinstall existing and install new, matching wood trim..

B. Wood baseboard system: Living, Dining, Kitchen, Entry Hall, and Bedrooms.

C. Cornice molding: Living, Dining and Entry Hall.

D. Door and Window trim: At all openings, including passage openings without doors.

E. Repair four (4) existing radiator cabinets in Entry and Living/Dining areas. Provide and install perforated metal panel, similar to the existing panels.

END OF SECTION

SECTION 07 2119
FOAMED-IN-PLACE INSULATION

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 MATERIALS

A. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
   1. Closed Cell Content: At least 90 percent.

2.02 ACCESSORIES

PART 3 EXECUTION

3.01 APPLICATION

A. Apply insulation in accordance with manufacturer's instructions.

B. Areas where Foamed-In-Place Insulation is installed shall remain uncovered and well-ventilated until insulation is fully cured.

3.02 LOCATION

A. Expose rim boards, as required. Insulate and air seal to rim joist cavities to an r-value of R-10.

B. Expose sloped roof areas, as required. Insulate and air seal sloped roof areas to R-19, minimum.

C. Seal all attic bypasses.

See Neighborhood Energy Connection Residential Energy Specification in Appendix for additional direction.

END OF SECTION

SECTION 07 2126

BLOWN INSULATION

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 MATERIALS

A. Loose Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
   1. R-Value: Attic R-50

B. Dense Pack Insulation: Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
   1. R-Value: 19 if possible
   2. Density: 3.5 Lbs. per Cubic Foot for the entire cavity

C. Ventilation Baffles: Formed plastic.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.

B. Drill 2-inch (50 mm) diameter insulation access ports in fascia boards to permit equipment access.

C. Place insulation pneumatically to completely fill stud, joist, and rafter spaces .

D. Pour insulation to completely fill stud, joist, and rafter spaces to a density of 3.5 lbs per cubic foot per cavity.

E. Completely fill intended spaces. Leave no gaps or voids.

F. Carefully seal all drilled holes with wood or foam plugs and patch all holes to match surrounding materials if the surface is exposed.

G. In balloon framed houses insures that blown cellulose is blocked from entering floor cavities such as second floor flooring.

3.02 LOCATIONS

A. Walls and Kneewalls: Where walls are unopened, externally dense pack insulation to R-19 if possible or 3.5 lbs.per cubic foot per cavity.

B. Second Floor Ceiling/Attic Floor: Dense pack insulation to R-50.

C. Insulate space above bays.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS

PART 1 GENERAL **$_____**

1.01 UNIT PRICES

A. Tyvek material has been pre-purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: Lampert Siding
   2. Pre-purchased materials: Tyvek Housewrap
   3. Contractor is responsible for receiving, confirming material delivery, unloading and setting materials in place.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Weather Barrier Membrane: Spunbonded polyolefin, non-woven, non-perforated, wether barrier
   1. Manufacturer: DuPont Tyvek HomeWrap or like product to be approved by owner.

B. Seam Tape: DuPont Tyvek or like product

C. Flashing: DuPont Tyvek or like product

   1. Following manufacturers instructions for installation of flashing at new door and window openings.

D. Fasteners: DuPont Tyvek or like product

E. Interior Vapor Retarder: 6 Mil heavy plastic (polyethylene) sheeting
   1. On inside face of masonry and concrete walls use vapor retarder sheet, self-adhesive type,.
      a. Install to cover ground in crawl space and 6" up foundation walls
      b. Overlap seams by 2' and secure with Tyvek tape.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

C. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturers recommendations.

D. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturers recommended fasteners, spaced 12-18 inches vertically on center along stud line, and 24 inches on center, maximum horizontally.

3.02 LOCATION

A. Weather Barrier at Exterior of the House, under newly-installed siding.

B. Exterior of the House: flashing at new door and window openings.

C. Interior vapor barrier on the interior side of exterior walls exposed by the Work.

END OF SECTION

SECTION 07 2700

AIR BARRIER SYSTEM (SEALING OF BYPASSES)

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in Minnesota.

PART 2 PRODUCTS

2.01 ADHESIVES AND SEALANTS

A. VOC content not to exceed the following [g/L; less water and less exempt compounds]
   1. Multipurpose construction adhesives: 70 g/L

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide continuous air barriers.
   1. Install continuous interior air barrier around the building
   2. Install continuous external air barrier between all conditioned space and unconditioned space.

B. Compartmentalization of dwelling units:
   1. Walls
      a. Seal exterior wall corners with joint sealant [and/or foam]
      b. Seal vertical walls at all penetrations with joint sealant [and/or foam]
      c. Seal window frame with low expanding foam
      d. Seal bottom plates on exterior walls with a foam gasket [and/or caulk, foam]
   2. Floors
      a. Provide complete seal at joists supporting conditioned space with joint sealant [and/or foam]
   3. Ceilings
      a. Install continuous top and bottom plates, and sheathing to create a six-sided air barrier on all attic knee walls and seal with foam [and/or caulk].
      b. Install blocking at exposed edges of insulation at joists and rafters
      c. Truss framing: Install blocking at the top and bottom of each framing bay.
      d. Seal attic hatches with joint sealant [and/or foam].
      e. Provide sealing around skylight shaft with joint sealant [and/or foam]
      f. Install baffles between all rafters or trusses to direct the flow of air over and above the attic insulation.
      g. Recessed lighting when below unconditioned attic: Install insulation contact, airtight rated (ICAT) and seal to drywall with gasket [and/or caulk, foam]
   4. Garage Isolation Air Barrier (when attached to dwelling unit)
      a. Install continuous air barrier between the conditioned living space and any garage space and seal with foam [and/or caulk].
      b. Seal between all walls separating conditioned and garages spaces with foam [and/or caulk].
      c. All pipe and conduit penetrations shall be sealed with material compatible with the adjacent materials and resilient to temperature fluctuations and providing fire-resistive characteristics of required by authorise having jurisdictions.
      d. Floor trusses: Seal and block floor trusses and joists between conditioned space and garage with foam [and/or caulk].
   5. Bathtub and Shower Enclosures
      a. Use mold-resistant material [plywood, oriented strand board (OSB), sheathing boards, moisture resistant gypsum] behind bathtub or shower enclosures, and extend the mold-resistant material the full length and with of the wall(s) on which the bathtub or shower enclosure abuts. Seal at all joints.

b. Install spray foam at framing behind bathtub or shower enclosure prior to setting tub or shower.

C. Continuity of External Air Barrier
1. Roof
a. Install 4-inch to 6 inch "peal and seal" self-adhering waterproofing strips over joints in roof decking before installing the roof underlayment and cover.
2. Mechanical work
a. Seal holes from penetrations from unconditioned spaces with joint sealant and provide flashing.
b. Seal flue openings with flashing and fire-rated joint sealant
3. Building Envelope
a. Air barrier must be continuous around building, including all components that act together as the exterior air barrier (sheet or liquid membrane with compatible tapes, caulks, flashing). Foam or caulk all exterior sheathing joints and intersections.
b. Install weatherstripping hard-fastened to the door or frame at entranceways.
c. Seal the roof curb at ductwork penetrations.
d. Install continuous air barrier at the intersection of the porch roof and conditioned space.
e. Air seal and insulate exterior sheathing on bottom of cantilevered floor.
f. Lap and Foam or caulk exterior rigid insulation over the seams of the exterior wall sheathing.
4. Fireplace Enclosures
a. Seal fireplace flue and wall penetrations with fire-rated caulking along with flashing or UL-rated collars.
5. Use air sealing with polyurethane caulk for following areas:
a. Slab openings
b. Slab penetrations
c. Control or expansion joints
d. Sump cover
6. Pest Management Measures
a. For openings in the building envelope less than 1/4 inch, including pipe and electrical penetrations:
1) completely seal to avoid pest entry.
b. Install rodent-and corrosion proof screens for openings greater than 1/4 inch.

3.02 LOCATION

A. Exterior and Interior Throughout, including attic.

SECTION 07 3113
ASPHALT SHINGLES

PART 1 GENERAL **$_____**

1.01 UNIT PRICES

A. Roofing material has been purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: Lampert Roofing
   2. Pre-purchased materials:
      a. GAF Elk Timberline 30 year HD Shingles
      b. Timetex Ice and Water Shield
      c. 15 lb. Felt.

1.02 QUALITY ASSURANCE

A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

PART 2 PRODUCTS

2.01 SHINGLES

A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462; Class A fire resistance.
   1. Self-sealing type.
   2. Manufacturer: GAF ELK, Timberline 30 Year HD shingles
   3. Style: Architectural Shingle.
   4. Color: Weathered Grey.

2.02 ACCESSORIES

A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch (2.67 mm) shank diameter, 3/8 inch (9.5 mm) head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.

B. Ventilation: Following manufacturer’s specifications, install screened vents with 50% in soffits and 50% at ridges. Flash and seal for weathertight installation. Vent as required by code.

PART 3 EXECUTION

3.01 INSTALLATION - SHINGLES

A. Install shingles in accordance with manufacturer's instructions.

3.02 LOCATION

A. House roofs.

B. Garage roofs.

END OF SECTION

SECTION 07 4633
PLASTIC SIDING

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

A. Color Charts: Where colors are not specified, provide samples of manufacturer's entire color line for selection.

PART 2 PRODUCTS

2.01 MATERIALS

A. General Requirements:
   1. Siding: Comply with ASTM D3679 Class 2.

B. Horizontal Vinyl Siding:
   1. Profile: Match existing.
   2. Thickness: 0.038 inch (0.97 mm), minimum.
   3. Length: 12 feet (3657 mm), minimum.
   4. Nailing Hem: Single layer, with 1-1/8 inch (28 mm) long nail holes at maximum 18 inches (457 mm) on center.
   5. Finish: Match existing.
   6. Color: Match existing.

D. Accessories: Provide coordinating accessories made of same material as required for complete and proper installation whether or not specifically shown on the drawings.

E. Fasteners: Aluminum nails, alloy 5056 or 6110, with minimum tensile strength of 63,000 pounds per square inch (434 MPa); length as required to penetrate framing at least 3/4 inch (19 mm).

PART 3 EXECUTION

3.01 INSTALLATION

A. Install siding in accordance with manufacturer's printed installation instructions.

B. Attach securely to framing, not sheathing, with horizontal components true to level and vertical components true to plumb, providing a weather resistant installation.

3.02 LOCATION

A. Exterior of the Garage, as required.

END OF SECTION

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL **$_____**

1.01 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Pre-Finished Aluminum Soffit, Trim and Fascia: ASTM B209 (ASTM B209M); plain finish shop pre-coated with modified silicone coating.
   1. Manufacturer: Alsco Perfect Trim Plus
   2. Color: White
   3. Dimensions: Conditions vary, match existing.

PART 3 EXECUTION

3.01 INSTALLATION

A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

B. Seal metal joints watertight.

3.02 LOCATION

A. Exterior of the house - soffit, trim, fascia, doors and windows.

B. Repair and extend existing, as required, for a complete and weather tight installation.

END OF SECTION

SECTION 07 7123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL **$_____**

1.01 DESIGN REQUIREMENTS

A. Conform to applicable code for size and method of rain water discharge.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pre-Finished Aluminum Sheet: ASTM B209 (ASTM B209M); 0.032 inch (0.8 mm) thick.
   1. Finish: Plain, shop pre-coated with modified silicone coating.
   2. Color: To match the exterior trim.

2.02 COMPONENTS

A. Gutters: K style profile, seamless, one-piece aluminum gutter and guard

B. Gutter Guard: seamless, one-piece aluminum gutter and guard

C. Downspouts: SMACNA Rectangular profile.
   1. Size: 3X5

D. Anchors and Supports: Profiled to suit gutters and downspouts.
   1. Gutter Supports: Brackets.
   2. Downspout Supports: Straps.

E. Fasteners: Galvanized steel , with soft neoprene washers.

2.03 ACCESSORIES

A. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3000 psi (21 MPa) at 28 days, with minimum 5 percent air entrainment.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.

B. Where feasible, a minimum of 6' offset extension shall be installed at the ends of all downspouts to divert water away from foundation..

3.02 LOCATION

A. Downspouts shall divert the entire water load in the direction of the rain garden(s) according to the Landscape Plan, as shown on Drawings.

B. Provide splash blocks under each downspout draining into sodded and planted areas.

END OF SECTION

SECTION 08 1100

EXTERIOR INSULATED METAL DOORS AND FRAMES

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 EXTERIOR PREHUNG METAL DOOR

A. Kitchen Door:
   1. Product: Mastercraft, E-1 Prehung, 6 Panel, Steel Door Left Swing 36” x 80” with 1 Sidelight

B. Garage Service Door:
   1. Product: Mastercraft, E-1 Prehung, 6 Panel, Steel Door Right Swing 36” x 80”

2.02 ALUMINUM STORM DOORS

A. Kitchen Door
   1. Product: Larson, Oakley, or approved equivalent

B. Entry Hall/Porch Door
   1. Product: Larson, Oakley, or approved equivalent

2.03 ACCESSORIES

A. DOOR HARDWARE: Door hardware finish to be Satin Nickel.
   1. Exterior Door Hardware: Schlange Avanti, Model 221-409x.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine doors and installed door frames before hanging doors.
   1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
   2. Reject doors with defects

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use a expanding foam to insulate between the door frame and the rough opening.

C. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor in place.

D. Align and fit doors in frames with uniform clearances set by manufacturer.

E. Seal edges of doors, edges of cutouts, and mortises after fitting and machining

3.03 SYSTEMS INTEGRATION

A. Coordinate with low-voltage security contractor to install contacts in door.

3.04 ADJUSTING

A. Adjust Doors for smooth operation.

B. Operation: Rehang or replace doors that do not swing or operate freely.

3.05 LOCATIONS

A. Kitchen Entrance - Door and Storm

B. Entry Hall/Porch Entrance - Door and Storm

C. Garage Service Door

END OF SECTION

SECTION 08 1429

WOOD DOORS

$_____

PART 2 PRODUCTS

2.01 INTERIOR WOOD DOORS

A. Quality Level: Premium Grade , in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.

B. Wood products that Emit Low or No Formaldehyde

C. Wood products that Emit Low or No VOC

D. Interior Doors: 1-3/8 inches (44 mm) thick unless otherwise indicated; solid lumber construction; mortised and tenoned joints.
   1. Wood: Maple on Second Floor and Oak on First Floor.
   2. Door Type: 6-panel, prehung.
   3. Manufacturer: Mastercraft, available at Menards

2.02 ACCESSORIES

A. Frame: Wood, of same species as door facing.

B. Adhesives and Sealants: VOC content not to exceed the following [g/L; less water and less exempt compounds]:
   1. Multipurpose Construction Adhesives: 70g/L

C. Privacy Lockset
   1. Manufacturer: Schlage Avanti, Model 221-389x.
   2. Finish: Satin Nickel.

D. Hinges to match the lockset.

E. Door stop

PART 3 EXECUTION

3.01 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and AWI/AWMAC Quality Standards requirements.

B. Coordinate installation of doors with installation of frames and hardware.

3.02 TOLERANCES

A. Conform to specified quality standard for fit, clearance, and joinery tolerances.

3.03 LOCATIONS

A. All interior doors

END OF SECTION

SECTION 08 2550

ATTIC ACCESS STAIR

$_____

PART 2 PRODUCTS

2.01 ATTIC ACCESS STAIR

A. Quality Level: Type 1A Duty Rating

B. Steel rail, rung and frame construction.

C. Load capacity: 350 lbs.

D. Attic Access Stair:
   1. Manufacturer: Fakro, available at Home Depot
   2. Model: LWM 22x47
   3. Dimensions: 22” x 47” x 8’11” or as required by conditions.
   4. Insulated Door.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install Attic Access Stair in accordance with manufacturer's .

B. Coordinate framing of opening as required.

3.02 TOLERANCES

A. Conform to specified quality standard for fit, clearance, and joinery tolerances.

3.03 LOCATIONS

A. Ceiling of North Bedroom, as shown on Drawings.

END OF SECTION

SECTION 08 3323

OVERHEAD GARAGE DOORS

PART 2 PRODUCTS

1.01 COILING DOORS

A. Overhead Garage Door:
   1. Product: Stockton MDP38, White., Insulated Premium Raised Panel, 7’ x 16’
   2. Guides: Formed track; galvanized steel.
   3. Electric operation.
   4. Mounting: Within framed opening.
   5. Exterior lock and latch handle.

1.02 ELECTRIC OPERATION

A. Electric Operators: Chain Drive Garage Door Opener
   1. Motor Rating: 1/3 hp (250 W); continuous duty.
   2. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
   3. Controller Enclosure: NEMA 250 Type 1.
   4. Opening Speed: 12 inches per second (300 mm/s).
   5. Brake: Adjustable friction clutch type, activated by motor controller.
   6. Manual override in case of power failure.

B. Control Station: Standard three button (OPEN-STOP-CLOSE) momentary control for each operator.
   1. 24 volt circuit.

C. Safety Edge: Located at bottom of curtain, full width, electro-mechanical sensitized type, wired to stop operator upon striking object, hollow neoprene covered.

PART 3 EXECUTION

2.01 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

C. Complete wiring from disconnect to unit components.

2.02 LOCATION

A. Garage

END OF SECTION

SECTION 08 5313

VINYL WINDOWS

PART 1 GENERAL $_____

1.01 PERFORMANCE REQUIREMENTS

A. Performance Requirements: Energy Star Rated to meet Minnesota climate conditions. Climate Zone 6 for 2006 IECC, ASHRAE 90.1-2007 and ENERGY STAR.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Windows: Extruded, hollow, tubular, ultra-violet resistant polyvinyl chloride (PVC) with integral color; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
   1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440 R15.
   2. Configuration: double hung and fixed double hung sash.
   3. Color: Color as selected.

B. Insect Screens: 14/18 mesh, steel strands.

C. Fasteners: Stainless steel.

D. Match existing Great Lakes UniFrame vinyl windows- www.uniframewindow.com.

2.02 ADHESIVES AND SEALANTS

A. VOC content not to exceed the following [g/L; less water and less exempt compounds]:
   1. Multipurpose Construction Adhesives: 70 g/L
   2. Structural Glazing Adhesives: 100 g/L

2.03 HARDWARE

A. Double Hung Sash: Metal and nylon spiral friction slide cylinder, each sash, each jamb.

B. Sash lock: Lever handle with cam lock.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install window units in accordance with manufacturers instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Insulate any voids between the window frame and the rough opening with foam insulation.

3.02 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.03 APPLICATIONS

A. Water Management: Walls, Exterior Windows
   1. Provide weather-resistive barrier/housewrap
   2. Provide pathway for liquid water to exit exterior wall assembly
   3. Provide pan flashing, side flashing, and head flashing

3.04 LOCATION

A. REPLACEMENT WINDOW SASH & GLAZING
   1. Replace damaged or malfunction sash and broken glazing.

B. NEW WINDOWS
   1. Fixed and Double-hung, as shown in the Drawings:

a. Living-room
b. Kitchen
c. Dining-room

END OF SECTION

SECTION 09 0120

REPAIR OF PLASTER AND GYPSUM BOARD SURFACES

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. This section covers surface repairs of plaster and gypsum board surfaces.

B. Finish surface type should be smooth unless otherwise indicated.

C. In existing textured surfaces, repairs shall match surroundings.

PART 2 PRODUCTS

2.01 ACCESSORIES

A. Galvanized metal lath

B. Joint Compound

C. Plaster

D. Plastic Tarps

PART 3 EXECUTION

3.01 REPAIR

A. Walls and Ceilings: Repair interior surface(s) so that finish surface is smooth, even and properly prepared for finish application.
   1. Protect adjacent finished surfaces by covering with plastic or tarps.
   2. Install galvanized metal lath (weight per city code) over area of back up as required. May also secure with screws and inserted piece of gypsum board in areas to be patched.
   3. Before applying scratch coats, dampen areas to reduce absorption from joint compound/plaster.
   4. Apply finish coat and bring to thickness flush with surrounding surface.
   5. The interior temperature must be no less than a minimum 60 degrees during this work.

3.02 LOCATION

A. Throughout; as needed following improvements.

END OF SECTION

SECTION 09 0160
HARDWOOD FLOORING RESTORATION

PART 1 GENERAL **$_____**

1.01 RELATED SECTIONS

A. See Section 099000 Painting and Coating.

B. See Section 01 6116 Volatile Organic Compound Content Restrictions

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 RESTORATION

A. Restore existing hardwood floors: Counter sink all nails and fill holes. Remove the quarter round molding and protect the wall molding with painters tape. Drum sand and edge floor finishing with 120 grit sandpaper to completely remove the existing finish. Vacuum and wipe floor with slightly water dampened rag, until no dust is present.

B. Extend hardwood floors where rooms are expanded with hardwood of like species, cut, and dimensions.

C. Extend hardwood flooring through new and relocated door openings with hardwood of like species, cut, and dimensions.

D. Vary lengths of new hardwood boards so that end joints in adjacent boards are no closer than 6 inches.

E Apply a coat of Minwax Low-VOC Water Based Polyurethane base coat followed by 3 coats of Minwax Low-VOC Water Based polyurethane for floors.
   1. Product may not exceed 250 grams of VOC per Liter

3.02 LOCATIONS

A. First Floor:
   1. Existing Hardwood Flooring throughout First and Second Floors
   2. Repair Hardwood Flooring where existing walls are removed and where door openings are relocated.
   3. Except bathroom and toilet room.

END OF SECTION

SECTION 09 2116

GYPSUM BOARD INSTALLATION

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: 1/2 inch (13 mm).
      b. Ceilings: 1/2 inch (13 mm).

B. Backing Board For Wet Areas: One of the following products:
   1. “Wet” Areas: GlassMat Gypsum Board, ASTM E119
   2. Tiled Areas: DensGuard Tile Backer.
   2. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.

2.03 ACCESSORIES

A. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
   1. Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
   2. Ready-mixed vinyl-based joint compound.
   3. Powder-type vinyl-based joint compound.
   4. Chemical hardening type compound.

PART 3 EXECUTION

3.01 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

3.02 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

3.03 LOCATIONS

A. As required by demolition and construction, including but not limited to:
   1. Existing North Bedroom ceiling due to asbestos remediation.
   2. Existing ceilings in South and East Bedrooms due to condition.
   3. Existing ceiling in Kitchen due to remodeling.
   4. New partitions required by the Work.
   5. Wet Areas: Kitchen plumbing wall, Bathroom.

END OF SECTION

SECTION 09 3000

TILING

PART 1 GENERAL $_____

1.01 ALLOWANCES

A. Not used.

1.02 FIELD CONDITIONS

A. Do not install adhesives in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

A. Glazed Wall Tile Type Ceramic: ANSI A137.1 , and as follows:
   1. Wall Tile: Ceramic, 4x4 inches, American Olean Midwest or equal.
   2. Floor Tile: Ceramic, 12x12 inches, 50% Preconsumer Recycled Content, American Olean Midwest or equal.
   2. Colors: To be selected by Project Manager from manufacturer's standard range.

2.02 TRIM AND ACCESSORIES

A. Ceramic Accessories: Glazed finish, same color and finish as adjacent field tile; same manufacturer as tile.

B. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.

C. Thresholds: Marble, white or gray, honed finish; 2 inches (50 mm) wide by full width of wall or frame opening; 1/2 inch (12 mm) thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.

D. Install marble thresholds at all transitions between flooring materials, such as tile to wood flooring.

2.03 GROUT MATERIALS

A. Standard Grout: Any type specified in ANSI A118.6 or A118.7.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

3.02 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over wood substrates, install in accordance with The Tile Council of North America Handbook Method F142, with standard grout, unless otherwise indicated.
   1. Where epoxy bond coat and grout are indicated, install in accordance with The Tile Council of North America Handbook Method F143.

B. Over wood substrate with backer board underlayment, install in accordance with The Tile Council of North America Handbook Method F144, for cementitious backer boards, with standard grout.

3.03 INSTALLATION - FLOORS - MORTAR BED METHODS

A. Over wood substrates, install in accordance with The Tile Council of North America Handbook method F141, with standard grout, unless otherwise indicated.

3.04 INSTALLATION - SHOWERS AND BATHTUB WALLS

A. At tiled shower receptors install in accordance with The Tile Council of North America Handbook Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.

B. At bathtub walls install in accordance with The Tile Council of North America Handbook Method B412, over cementitious backer units with waterproofing membrane.

C. Grout with standard grout as specified above.

3.05 INSTALLATION - WALL TILE

A. On exterior walls install in accordance with The Tile Council of North America Handbook Method W202, thin-set over concrete and masonry with latex-Portland cement grout.

B. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244, using membrane at toilet rooms.

3.06 LOCATIONS

A. Bathroom Tile Wainscot

B. Bathroom and First Floor Toilet Room Tile Floor

SECTION 09 9000

PAINTING AND COATING

PART 1 GENERAL $_____

1.01 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.02 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Paints and Coatings: Sherwin Williams Low VOC or an any manufacturer listed in the Master Painters Institute (MPI) Approved Products List (at www.paintinfo.com) approved by Project Manager.
   1. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
   2. Provide all paint and coating products from the same manufacturer to the greatest extent possible.

B. Stains: Minwax Low VOC or any other manufacturer approved by Project Manager.
   1. Polyurethane semi-transparent.

2.02 MATERIALS - GENERAL

A. Volatile Organic Compound (VOC) Content:
   1. Provide coatings that comply with the most stringent requirements specified in the following:
      a. Flat: 50 grams/Liter
      b. Non-Flat: 50 grams/Liter
      c. Floor Coating: 100 grams/Liter
      d. Anti-Corrosive: 250 grams/Liter

2.03 PAINT SYSTEMS

A. Provide Premium Grade systems (primer and 2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.

B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.

C. Where sheen is not specified or more than one sheen is specified, sheen will be selected later by Construction Manager from the manufacturer's full line.

D. Provide colors as directed by Project Manager.

E. Provide smooth texture throughout.

2.04 EXTERIOR PAINT SYSTEMS

A. Wood Traffic Surfaces:
   1. Applications include but are not limited to Decks.
   2. EXT 6.5D Deck Stain: Wood Preservative MPI #37, Deck Stain MPI #33.

2.05 INTERIOR PAINT SYSTEMS

A. Dressed Lumber:
   1. Applications include but are not limited to doors, door frames, window frames, window casings, trim, baseboards, and moldings.

B. Plaster and Gypsum Board:

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

A. Paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.

B. Paint the surfaces described in PART 2 and as follows:
   1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
   2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
   3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.
   4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.

C. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
   2. Items indicated to receive other finish.
   3. Items indicated to remain naturally finished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

3.02 APPLICATION

A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.

B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.

C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.

E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.

3.03 LOCATIONS

A. Review the Lead Report attached to this Manual for locations of lead hazards and to Section 02 8313 Lead Hazard Control Activites for requirements for lead hazard controls.

B. Throughout
   1. Walls and Ceilings: Sherwin Williams Low VOC
      a. Wall Color: Nacre #SW6154, eggshell
      b. Ceiling Color: Ceiling White, flat
   2. Interior Trim: Minwax Low VOC Stain
      a. Trim Color: Match existing where trim is stained and varnished.

C. South Bedroom
   1. Walls and Ceilings: Sherwin Williams Low VOC
      a. Wall Color: Accessible Beige #SW7036, eggshell
      b. Ceiling Color:.Ceiling White, flat

D. Bathroom and Toilet Room
    1. Walls and Ceilings: Eggshell Sherwin Williams Low VOC
        a. Wall Color: Accessible Beige #SW7036, semi-gloss
        b. Ceiling Color: Ceiling White

E. Basement:
    1. Stairway to include treads, risers, and landings.
    2. Color: Match concrete floor grey

F. Exterior:
    1. Exterior Wood Shingle Siding
        a. Color: Selected by Construction Manager.
    2. Railings at Deck
        a. Color: white
    3. Back Deck - Stain
        a. Color: Charcoal Grey

END OF SECTION

SECTION 10 5623

CLOSET STORAGE SHELVING

PART 1 GENERAL **$_____**

1.01 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, with installation instructions.

PART 2 PRODUCTS

2.01 SHELVING APPLICATIONS

A. Shelf Depth: 12 inches (305 mm), unless otherwise indicated.

B. Bedroom Closets:
   1. Wall-to-wall shelf with free sliding hanger rod.
   2. Not less than 4 feet (1.25 m) of shoe shelf.

C. Coat Closets:
   1. Wall-to-wall shelf with integral hanger rod.

D. Linen Closets:
   1. Wall-to-wall shelves spaced at 13 inch (330 mm) vertically, not less than 16 inch (408 mm) deep.

E. Storage Closets:
   1. Wall-to-wall storage shelves, stacked at 13 inch (330 mm) vertically, not less than 12 inch (305 mm) deep.

2.02 MATERIALS

A. Wire Shelving: Factory-assembled coated wire mesh shelf assemblies for wall-mounting, with all components and connections required to produce a rigid structure that is free of buckling and warping.
   1. Construction: Cold-drawn steel wire with average tensile strength of 100,000 psi (690 MPa) resistance welded into uniform mesh units, square, rigid, flat, and free of dents or other distortions, with wires trimmed smooth.
   2. Coating: PVC or epoxy, applied after fabrication, covering all surfaces.
   3. PVC Coating: 9 to 11 mils (0.23 to 0.028 mm) thick.
   4. Epoxy Coating: Non-toxic epoxy-polyester powder coating baked-on finish, 3 to 5 mils (0.76 to 1.27 mm) thick.
   5. Standard Mesh Shelves: Cross deck wires spaced at 1 inch (25.4 mm).
   6. Close-Mesh Shelves: Cross deck wires spaced at 1/2 inch (12.7 mm).
   7. Shelf and Rod Units: Integral hanging rod at front edge of shelf.
   8. Free-Sliding Hanging Rod: Integral hanging rod that permits uninterrupted sliding of hangers the full width of the shelf.
   9. Shoe Shelves: Same wire spacing as standard mesh shelves; angled wall brackets; upturned front lip.

B. Fasteners: As recommended by manufacturer for mounting substrates.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions, with shelf surfaces level.

B. Install back clips, end clips at side walls, and support braces at open ends. Install intermediate support braces as recommended by manufacturer.

3.02 LOCATIONS

A. Closets Throughout

END OF SECTION

SECTION 11 3100
HRA RESIDENTIAL APPLIANCES

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. All appliances must be purchased new and Energy Star certified or high efficiency models when Energy Star certification is not possible.

B. All appliances must meet the Sustainable Design Requirements covered in Section 018113

1.02 PRICE AND PAYMENT PROCEDURES

A. Appliances have been pre-purchased by the HRA for this project. Delivery of all material to the job site is included in pre-purchase. Contractor is responsible for contacting specified vendor to arrange for and take delivery. Contractor is responsible for receiving, confirming materials delivered, unloading and setting materials in place. Provide a bid price for labor and additional materials required to perform work to code.
   1. Vendor: All, Inc. Appliances
   2. Product:
      a. Refrigerator: FFHT2126LS/K Energy Star Rated 21 cu ft top mounted refrigerator, stainless steel, with icemaker
      b. Range: FFGF3053LS Frigidaire 30" Free-standing Gas Range, Self Clean, Clock
      c. Microwave/Hood: FFMV162LS Over the Range Micro/Hood, to be vented to exterior
      d. Dishwasher: FGHD2433KF Energy Star 24" Built-in Dishwasher, including dishwasher cord.
      e. Washer: FAFW3801LW Energy Star Residential Front Load Washer
      f. Dryer: FAQG7001LW Residential Gas Dryer

1.03 SUBMITTALS

A. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.

1.04 QUALITY ASSURANCE

A. Electric Appliances: Listed and labeled by UL and complying with NEMA standards.

B. Gas Appliances: Bearing design certification seal of AGA.

PART 3 EXECUTION

2.01 INSTALLATION

A. All appliances shall be uncrated, cleaned and readied for use.

B. Installation shall include all cord attachments, wiring, plumbing, dryer vent, and gas hook ups necessary for appliance operation.

C. Install in accordance with manufacturer's instructions.

D. Anchor built-in equipment in place.

2.02 LOCATIONS

A. Kitchen

B. Laundry, located in Basement.

END OF SECTION

SECTION 12 1110
HRA MAIL BOX AND HOUSE NUMBERS

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

A. Allowances: Not used.

PART 2 PRODUCTS

2.01 MAILBOX

A. Black Locking Wall Mounted Mailbox
   1. 12.5”x9.625”x4.375”
   2. Available at Menards

2.02 HOUSE NUMBERS

B. Black Distinction Flush Mount
   1. 4” high
   2. Two sets: House and Garage
   3. Available at Menards

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATION

A. House Number and Mailbox at Front Entrance

B. House Number at Garage Overhead Door Entrance

END OF SECTION

SECTION 12 1111

BATHROOM FURNISHINGS

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 TOWEL SETS

A. Install a metal bath set comprised of a hand towel ring, 24" towel bar and toilet paper holder

B. Manufacturer: Moen, Saga Series Toilet Accessories
   1. Hand Towel Ring: Model # DN6886xx
   2. Towel Bar: Model # DN6818xx
   3. Toilet Paper Holder: Model # DN6808xx

C. Brushed nickel finish to match faucet

2.02 MEDICINE CABINET

A. Install a medicine cabinet with hinged plate glass mirror and two shelves.

B. Manufacturer: Pace, Meadowood Maple. Model # SMC-2530

C. Brushed nickel finish to match faucet

2.03 SHOWER CURTAIN ROD

A. Install a show curtain rod using wall anchors.

B. Manufacturer: Moen, Adjustable Shower Rod. Model # DN2160xx

C. Brushed nickel finish to match faucet

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. Second Floor Bathroom
   1. One Hand Towel Ring
   2. Two Towel Bars
   3. One Towel Paper Holder
   4. Medicine Cabinet
   5. Shower Rod

B. First Floor Toilet Room
   1. One Hand Towel Ring
   2. One Towel Paper Holder
   3. Medicine Cabinet

END OF SECTION

SECTION 12 3530

RESIDENTIAL CASEWORK

PART 1 GENERAL $_____

1.01 PRICE AND PAYMENT PROCEDURES

A. Kitchen and Bathroom Cabinets and Counter Tops are shown in the Drawings. Provide a bid price for the specified material, additional materials required to perform the work, and labor.

1.02 SUBMITTALS

A. Shop Drawings: Indicate casework locations, large scale plans, elevations, clearances required, rough-in and anchor placement dimensions and tolerances.

1.03 QUALITY ASSURANCE

A. Products: Complying with KCMA A161.1 and KCMA Certified.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. The HRA has approved Shrock Cabinets

1. Door/Drawer Style: Pleasant Hill- Maple (Full Overlay)
2. Finish: Natural
3. Hardware: Schrock Pull H63, Modern, Brushed Aluminum

2.02 COMPONENTS

A. Kitchen Cabinets: Kitchen Design, see Drawings.

B. Bathroom Vanity Cabinets: Single 30 inch Vanity Cabinet shall match Kitchen Cabinet finish, see Drawings and Section 22 4000.

C. Cabinet Construction: Plywood sides and bases.

D. Kitchen Countertop: Post formed plastic laminate over particle board, coved to back splash.

1. Side Splash: Plastic laminate over particle board, square internal intersections to back splash and top surface, contoured to suit counter top profile.
2. Countertop edge profile: waterfall.
3. Manufacturer: WilsonArt, Canyon – Black #1755-1

E. Door and Drawer Fronts: Solid wood.

F. Drawer Box Construction: Plywood with dovetail joinery

2.03 HARDWARE

A. Hardware: Manufacturer's standard.

2.04 FABRICATION

A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.

B. Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.

2.05 FINISHES

A. Exposed To View Surfaces: Stain, seal, and varnish of natural color as selected.

PART 3 EXECUTION

3.01 LOCATIONS

A. Kitchen: Cabinets & Counter Top

3.02 INSTALLATION

A. Install casework, components and accessories in accordance with manufacturer's instructions.

B. Set casework items plumb and square, securely anchored to building structure.

END OF SECTION

SECTION 22 3300

FUEL FIRED DOMESTIC HOT WATER HEATER (HYBRID WATER HEATER)

PART 1 GENERAL **$_____**

1.01 ALTERNATES

A. None.

1.02 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide 15 year manufacturer warranty for residential no leak.

PART 2 PRODUCTS

2.01 BASE BID MANUFACTURER

A. Product: Eternal Advanced Hybrid Water Heating System GU145
   1. Stainless steal heat exchanger with built in 2 gallon reserve tank
   2. Self-cleaning: utilizes turbulent flow to flush sediment out
   3. Digital display for adjusting temperature and easy diagnostics

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.02 LOCATIONS

A. Basement

END OF SECTION

SECTION 22 4000

PLUMBING FIXTURES AND PIPING

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 SINKS

A. Kitchen Sink: Remove existing sink to code legal dump.
   1. Sink: Install a 22 gauge 33"x22"x8" double bowl, stainless steel, self rimming kitchen sink. Manufacturer: Moen, Model number 2212, or like product to be approved by Project Manger
   2. Faucet: Manufactured by Moen, Model 7825, Chrome, or like product to be approved by Project Manager
      a. Flow Rate: 2.0 GPM maximum

B. Bathroom and Toilet Room Vanity:
   1. Sink: 31 inch solid recessed oval bowl vanity top Manufactured by Imperial Marble. Model number RCxx22SPW
   2. Faucet: Single lever faucet with 1.5 GPM maximum flow rate
      a. High Arch Faucet: Manufactured by Moen, Model number (Nickel) CA84003CBN

2.02 DUAL FLUSH TOILET

A. Dual Flush Water Closets: ASME A112.19.14; high efficiency and low consumption, vitreous china, dual flush, tank type.
   1. Mansfield ProFit 3
   2. Bowl: Elongated.
   3. Flush Actuator: Manufacturer's standard.
   4. Rough in: 12 inch (305 mm).
   5. Seat: Manufacturer’s standard or recommended elongated closed front seat with lid.
   5. Color: White.

2.03 BATH TUB/SHOWER

A. Existing.

2.04 LAUNDRY SINK

A. Flooring Standing Veritek Laundry Sink.
   1. White
   2. Dimensions: 22 7/8"W x 23 3/8"D x 14 5/8"H
   3. Model: MF10000FM-001

2.05 **HOSE BIBB**

A. MPT Anti-siphon Hose Bibb
   1. Size: 1/2 inch.
   2. Color: Satin Nickel Plated.
   3. Model> C-258NP.50

PART 3 EXECUTION

3.01 INSTALLATION

A. Install each fixture with trap, easily removable for servicing and cleaning.

B. Install new PVC or ABS waste and vent piping from basement to kitchen sink, all bathroom fixtures, and laundry sink.

C. Install flexible PEX piping with a minimum number of coupling to all fixtures. Install mechanical connectors and shut off valves if appropriate for each fixture.

1. Sixe pipe to 1990 CABO minimums per table 2406.5
2. Include clothes washer hook up.

D. Furnish and install all water piping and shut-off valves necessary to complete work.

E. Retrofit the water meter to comply with existing code.

F. Install components level and plumb.

G. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 9005, color to match fixture.

H. Seal around plumbing penetrations in all exterior surfaces, surfaces that border on unconditioned spaces, between floors, and through the exterior of the building.

I. In addition to the Contract Documents, correct any deficiencies identified in the Code Compliance Report in the Appendix.

J. Clean out basement floor drain at end of construction period and verify operation and function.
1. Install new drain cover.

3.02 LOCATIONS

A. Exterior:
1. Hose bibb - located east side of home.

B. Basement:
1. Domestic Water
2. Indirect-Fired Water Heater
3. Washer
4. Laundry Sink

C. Kitchen
1. Kitchen Sink
2. Dishwasher

D. Bathroom:
1. Dual Flush Toilet
2. Lavatory
3. Tub/Shower

E. Toilet Room – First Floor
1. Dual Flush Toilet
2. Lavatory

END OF SECTION

SECTION 23 0000

RESIDENTIAL VENTILATION

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 BATHROOM VENT FAN/LIGHT FIXTURE:

A. All vent fans shall be energy star rated ceiling mounted fan/light fixtures rated for a minimum 100 watt exterior ducted vent fan capable of a minimum of 80 CFM

B. Product: NuTone QTREN080FLT or like product to be approved by the Project Manger

C. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.

D. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.

1. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
2. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

2.02

2.03 DUCT ASSEMBLIES

A. Low Pressure Supply (Heating Systems): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

B. Low Pressure Supply (System with Cooling Coils): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

C. General Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

D. Kitchen Cooking Hood Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

2.04 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.

B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

2.05 KITCHEN HOOD EXHAUST DUCTWORK

A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, SMACNA Kitchen Ventilation Systems and Food Service Equipment Fabrication & Installation Guidelines and NFPA 96.

PART 3 EXECUTION

3.01 INSTALLATION

END OF SECTION

SECTION 23 5214

GAS-FIRED ULTRA EFFICENT BOILER

PART 1 GENERAL $_____

1.01 REQUIRMENTS

A. Furnish and install packaged, modulating, sealed combustion, power-vented, high efficiency gas-fired boiler with cast aluminum heat exchangers that use outside air for combustion.

B. Boiler shall be 92.8% minimum DOE efficient as required by National Energy Conservation Act or ASHRAE 90.1

C. Boiler shall maintain a minimum temperature of 70 degrees F when outdoor temperature is -10 degrees F.

D. 2 - Zone system with 2 programmable thermostats; one in each zone.
   1. Zone 1: 1st Floor
   2. Zone 2: 2nd Floor

PART 2 PRODUCTS

2.01 ULTRA EFFICENT BOILER

A. Acceptable boiler manufacturer(s) include(s): Weil-McLain or approved by Project Manager

B. Boiler: Weil-McLain Ultra 3 Series or like product to be approved by Project Manager

C. Boiler Construction: Cast aluminum mon block heat exchanger

D. Efficiency:
   1. Annual Fuel Utilization Efficiency: 92.8.

2.02 HOT WATER BOILER TRIM

A. ASME rated pressure relief valve, 30 psig (207 kPa).

B. Low water cut-off to prevent burner operation when boiler water falls below safe level.

C. High limit temperature controller with manual reset for burner to prevent boiler water temperature from exceeding safe system temperature.

D. Boiler air vent.

2.03 FUEL BURNING SYSTEM

A. Collector and Draft Hood: Non-metallic vent pipe.

B. Controls: Pre-wired, factory assembled electronic controls in control cabinet with flame scanner or detector, programming control, relays, and switches. Provide pre-purge and post-purge ignition and shut-down of burner in event of ignition pilot and main flame failure with manual reset.

2.04 ACCESSORIES

A. Piping to existing radiators

B. Power control wiring

C. Expansion Tank

D. Circulation Pump

E. Set-back Thermostat

PART 3 EXECUTION

3.01 INSTALLATION

A. Install according to manufacturers installation instructions.

B. All work to be done in neat and workmanlike manner.

C. Provide connection of natural gas service in accordance with requirements of NFPA 54 and applicable codes.

D. Provide new and complete copper piping system to all radiators.

E. Provide water, gas, and flue piping.

F. Clean paint from existing radiators following Lead Hazard Control procedures. (See Section 02 8313.) Flush radiators thoroughly. Refinish radiators and reinstall.

F. Run water through the piping and radiators to clean residue out of the system and clean filters.

G. In addition to the work identified in the Contract Documents, correct any deficiencies identified in the Code Compliance Report in the Appendix.

3.02 LOCATIONS

A. Boiler - basement

B. Install all new heat piping throughout. 1st floor one zone and 2nd floor second zone.

END OF SECTION

SECTION 26 0001

POWER, WIRING AND DEVICES

PART 1 GENERAL **$_____**

1.01 SUMMARY OF BULLETIN 80-1 (Property Maintenance Code)

A. All hazardous, improper and/or illegal wiring shall be removed or required to the present Electrical Code. This will include other buildings on the property such as garages, sheds, etc.

B. Minimum size for all new services for single residential occupancies shall be 100 ampere, 240 Volt.

C. No additions or extensions will be allowed on an existing ampere services.

D. The Following are minimum requirements for new service installation:

1. **Electrical outlets required:** Every habitable room 120 square feet or less in area, of a dwelling or dwelling unit of a multiple dwelling shall contain at least two separate and remote duplex outlet shall be required for each additional 80 square feet or fraction thereof. Most new outlets must be Arc-Fault Circuit Interrupters (AFCI) protected according to Section 210.12 of the 2008 National Electrical Code.
2. **In Kitchens:** Three separate and remote duplex outlets shall be required. At least one of the required duplex outlets shall be supplied by a separate twenty ampere circuit. Any new receptacle installed for the counter top shall be of the Ground Fault Circuit Interrupter (GFCI) type.
3. **Every hall, water closet compartment, bathroom, laundry room and furnace room must contain at least one electric light fixture.** In addition to the light fixture, every bathroom and laundry room must have at least one duplex outlet. The required duplex outlet in each laundry room must be on a separate twenty ampere circuit. The required duplex outlet in each bathroom must be of the (GFCI) type. Any existing outlets in any bathroom must be converted to a GFCI-protected outlet or removed. The required GFCI outlet in the bathroom must be immediately adjacent to the sink. If a bathroom is added or gutted as part of the update, a 20 ampere circuit will be required per NEC 210.11(C)(3).
4. **Every common hall and inside stairway** in every residential structure or dwelling unit shall be adequately lit with an illumination of at least five lumens per square foot in the darkest portion of the normally traveled stairs and passageways.
5. **All exterior exits and entryways** are required to be illuminated a minimum of one footcandle at grade level for security.
6. **Exterior lighting** at garages is required to be adequate so as to not endanger health or safety. An average of one footcandle at the pavement is required. Exterior lighting must be in conformance with other city codes.
7. **Basement:** One lighting outlet is required for each 200 square feet of floor space. At least one of the required basement lighting outlets shall be switched form the head of the stairs.
8. **Smoke Detectors:**
   a. All single-family dwelling shall have a hard-wired (120 volt electrical, not battery) battery-backup smoke detector installed near (not in) the bedrooms. If there are legal bedrooms on more than one level, the detector shall be installed on the level that has the greater number of bedrooms. If there are an equal number of bedrooms on more than one level, the detector shall be installed on the upper level near the bedrooms.
   b. If the project includes building construction that requires a Building Permit, additional hard wired interconnected and/or battery-type smoke detectors are required per the Building Code.
9. **Metallic Light Fixtures (Luminaries):** If within five feet horizontally or eight feet vertically of grounded surfaces (metallic piping, concrete floor, etc.) must be grounded.
10. **Residential Closet Lights:** All closet lights must either be a florescent fixture(luminaire) or an enclosed incandescent fixture of the types required by the present Electrical Code. Fixtures must not be directly over the storage area in a closet; they must either be moved or eliminated and blanked off.

11. **Service conduits run in outside walls:** If a 100-ampere service is changed from fuses to circuit breakers, the meter is already outside, and the existing conduit is run in the outside wall, the conduit may be re-used. If the service is an upgrade (increase in amperage), conduit in the wall may not be re-used.

1.02 SECTION INCLUDES:

A. Rewire house to code

B. Overhead Garage Door Opener: see Section 08 3323

C. Certify Electrical Distribution: Electrician shall inspect all exposed wiring, motors, fixtures and devices for malfunction, shorts and hosing code compliance. Non-functioning and dangerous equipment and wiring shall be replaced

D. Replace existing electrical service with a residential, 150 amp, single phase, 3 wire electric service to the basement.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Conduit and Cable: Provide materials that meet code requirements.

B. New Service: Include a main disconnect, 22 circuit panel board, meter socket, weather head, service cable, and ground rod and cable. Seal exterior service penetrations.
   1. New service panel shall conform to the BOCA Existing Structures code.

C. Devices and Coverplates: Provide all White or Ivory devices per Project Managers Selection. Provide heavy duty residential grade devices.

D. Smoke/CO Detectors: Hard wired w/ battery-back up type units

E. Doorbell system: System containing a low voltage transformer, power connection, buzzer and front door button.

F. Equipment Wiring: Provide the correct power supply on separate circuit, with over current protection including all connecters for the Water Heater, Boiler, Microwave, Refrigerator, and Dishwasher.
   1. Kitchen Receptacles to be 20 amp Circuits:
      a. Install small appliance circuits along counter tops to code.
         1) Evenly dividing the number of countertop appliance receptacles between 2 circuits.
         2) GFCI receptacles when they fall within 6 feet of sink.
      b. Individual circuits for permanently installed appliances; range, dishwasher, exteriorly vented Microwave with Rangehood and refrigerator to code.

G. Bathroom Vent Fan/Light Fixture: Shall be Energy Star rated ceiling mounted fan/light fixture rated for a min 100 watt exterior ducted vent fan capable of a minimum of 80 CFM
   1. Product: NuTone QTREN080FLT or like product to be approved by the Project Manger
   2. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.
   3. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.
      a. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
      b. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

H. GFCI Receptacles: Install flush mounted, ground fault circuit interrupted ivory duplex receptacle adjacent to lavatory using copper Romex.

2.02 MATERIALS

A. All materials shall be UL approved and/or National Electrical Code rated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Building Codes: The extent of electrical work indicated in the Scope of work is stated generally to indicate end result of work. The Contractor is responsible for making a thororugh inspection of the site to determine the full extent of work required to achieve the end results. All electrical work must meet current building code requirments and must pass City of Saint Paul field inspection. Any work that does not meet codes or pass inspection must be corrected to the satisfaction of the city inspector at no additional cost to the Owner.

C. Remove and dispose of all abandoned wiring and devices. Modify existing wiring and devices as indicated.

D. All new wiring, when passing through living areas, shall be concealed.

E. All new receptacles and switches

F. All new outlet covers: Ivory

G. All drilling, cutting and fastening shall be neat and true, and shall not critically damage framing members.

H. All patching shall match the surrounding surface.

I. In addition to the work identified in the Contract Documents, correct any deficiencies identified in the Code Compliance Report in the Appendix.

3.02 LOCATIONS

A. Throughout
   1. House
   2. Garage

END OF SECTION

SECTION 26 5101

HRA LIGHTING

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

PART 2 PRODUCTS

2.01 INTERIOR LIGHTING

A. Royce Lighting
   1. Product Series: Carleton, Pewter Finish
      a. 3 Light Flush Mount: Model RFM5209ES
      d. 3 Light Chandelier: RC5209ES3
      e. Mini Pendant: RMP5209ES1
      f. 3 Light Vanity: Model RV5209ES3

B. Twin Pack Flush Mount, 15” satin nickel.

C. Other Acceptable Manufacturers: To be approved by Project Manager

2.02 EXTERIOR LIGHTING

A. Garages: DualBrite 300 watt motion security light with shields: Model SL-5318-WH-D

B. Exterior Flush Mount
   1. Patriot Lighting
      a. Mission

2.03 BASEMENT LIGHTING

A. Stairway: One fixture on stairway landing and one at the bottom of the stairway. Once switch at the top of the basement stairway to control these two lights.

B. Additional ceiling mounted pull chain lights in various location throughout the basement where necessarily.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. All new wiring when passing through living areas shall be concealed.

C. Wire mold and surface mount boxes for receptacles.

D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaries.

3.02 LOCATIONS

A. BASEMENT:
   1. Replace all with new pull chain porcelain fixtures.

B. MAIN LEVEL:
   1. Entry Hall - One Three Light Flush Mount.
   2. Living-room - None, switches at Entry Hall doorway to outlet.
   3. Kitchen – One- Three Light Flush Mount and Two- Mini Pendants at Peninsula, separately switched.
   4. Dining - Three Light Chandelier, wall switch
   5. Stairway to basement- ceiling light on 1/2 up landing, switch at top.:
   6. Hall – Twin Pack Flush Mount, wall switch
   7. Toilet Room – Vanity Three Light, wall switch. Fan/Light combo, wall switch.
   8. Closets - Twin Pack Flush Mount, wall switch.
   9. Three Bedroom s - Three Light Flush Mount, wall switch.
   10. Bathroom - Vanity Three Light, wall switch. Fan/Light combo, wall switch.

D. EXTERIOR:
   1. Front porch – Two Flush Mount, Mission, Patriot Lighting #of2739cu , separately switched.
   2. Back deck - Dual Brite 300watt motion security light with shields.
   3. Garage – Dual Brite 300watt motion security light with shields.
   4. Verify and provide function and control for existing post light in front yard, as required.

END OF SECTION

SECTION 28 1600
INTRUSION DETECTION

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. Provide and install a security system, to include a minimum of hardwired control panel with cellular transmitter (no phone line required), 2 hardwired keypads, two (2) Door sensors, motion detector, low temperature monitoring and siren.

B. Include a monthly monitoring service at a rate not to exceed $50/month.

C. Contracts for monitoring must be month to month, not an extended period.

D. Monitoring shall begin upon completion of construction and be paid by Owner.

1.02 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.01 ALARM CONTROL PANEL

A. Control Panel: Modular construction with surface wall-mounted enclosure.

B. Power supply: Adequate to serve control panel modules, remote detectors, and alarm signaling devices. Include battery-operated emergency power supply with capacity for operating system in standby mode for 24 hours.

2.02 INITIATING DEVICES

A. Magnetic Switches:

B. Motion Detectors:

2.03 SIGNAL DEVICES

A. Alarm Bells: NFPA 72, electric single stroke, 8 inch (200 mm) bell with operating mechanism behind dome. Sound Rating: 81 dB at 10 feet (3 M).

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use 18 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in cable.

C. As soon as System is installed contact HRA Project Manager Insert Tchu Yajh by email at tchu.yajh@ci.stpaul.mn.us to inform him/her to apply for a security permit.

3.02 CLOSEOUT ACTIVITIES

A. Demonstrate normal and abnormal modes of operation, and required responses to each.

END OF SECTION

SECTION 31 2200

GRADING

PART 1 GENERAL **$_____**

PART 3 EXECUTION

2.01 ROUGH GRADING

A. When excavating through roots, perform work by hand and cut roots with sharp axe.

2.02 FINISH GRADING

A. Build up ground slope at foundation wall using clean fill. Maintain 6 inches minimum below wood materials per code.

B. New fill shall have an apporoximate slope of 1/12 and extend away from the foundation wall approximately five feet.

C. Adjust window wells for new slope.

D. Remove roots, weeds, rocks, and foreign material while spreading.

E. Vigorously tamp or roll new fill to achieve settled depth.

F. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

2.03 LOCATIONS

A. Provide grading modifications as required to comply with the requirements of the Landscape Plan. See Landscape Plan.

END OF SECTION

SECTION 32 1313
CONCRETE PAVING

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

A. Concrete Sidewalks and Median Barrier: 3,000 psi (20.7 MPa) 28 day concrete, 4 inches (100 mm) thick, buff color Portland cement, light broom finish.

2.02 FORM MATERIALS

A. Wood form material, profiled to suit conditions.

PART 3 EXECUTION

3.01 FORMING

A. Place and secure forms to correct location, dimension, profile, and gradient.

3.02 COLD AND HOT WEATHER CONCRETING

A. Follow recommendations of ACI 305R when concreting during hot weather.

B. Follow recommendations of ACI 306R when concreting during cold weather.

3.03 FINISHING

A. Sidewalk Paving: Light broom, texture perpendicular to direction of travel with troweled and radiused edge 1/4 inch (6 mm) radius.

B. Curbs and Gutters: Light broom, texture parallel to pavement direction.

3.04 LOCATIONS

A. See Landscape Plan

B. Sidewalks, as shown on Drawing A001.

END OF SECTION

SECTION 32 3129
WOOD FENCES AND GATES

PART 1 GENERAL **$_____**

1.01 SUMMARY

A. Provide a 6' high wood privacy fence and gates

1.02 SECTION INCLUDES

A. Wood fence, gates and hardware.

PART 2 PRODUCTS

2.01 MATERIALS

A. Lumber Standards: Comply with PS 'American Softwood Lumber Standard" for lumber and with applicable gradeing rules of inspection agencies.

B. Wood Moisture Content: Comply with requirements of referenced quality standard and manufacturer's recommendations for mositure content of finish carpentry.

C. Fence Materials: Provide the Following:
   1. Species and Grade: Western Red Cedar, heartwood. No cracks, splits or warps.
   2. Posts: 4x4 (3 1/2 x 3 1/2 actual)
   3. Rails: 2x4 (1 1/2 x 1/2 actual), 3 per fence section (top, bottom and middle)
   4. Pickets: 1x4 (3/4 x 3 1/2 actual), square edges and corners.

D. Fasteners: Stainless Steel.

E. Gates:
   1. 3' wide gates consisting of 2x4 frame and diagonal bracing with 1x4 pickets. Three heavy duty hinges and heavy duty latch per gate.

F. Cast -in- place Concrete: See Section 03 3000

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Locate utilities before installation. Locate fence and gates according to site plan. Install all components true and level

C. Set 12" sonotubes at post locations to allow for concrete footings minimun 42" below grade plus 6" gravel. Install posts per site plan, maximum of 6'-0" o.c.. Set post level on top of gravel before pouring footing.

D. Slope top of footing to drain away from posts, top of footing at grade level. Allow for concrete footings to cure before installing rails and pickets.

E. Install rails 2" below finished top of pickets, 2" above bottom, and at midpoint, with outside face of rails flush with outside face of post. Install pickets on exterior side (facing away from house) of rails and post, with 1/4"gap between pickets.

F. Install pickets with consistent top height across entire fence and minimum 2" maximum 5" between bottom of pickets and grade (consistent height each section between posts).

3.02 LOCATION

A. East property line from northeast corner of neighboring house to garage.

B. Between northwest corner of garage and west property line with gate to alley.

C. West property line from northeast corner of House connecting to new fence at alley (3.02.B) with gate to side yard.

END OF SECTION

SECTION 32 9223

SODDING

PART 1 GENERAL **$_____**

PART 2 PRODUCTS

2.01 MATERIALS

A. Sod: TPI, Certified Turfgrass Sod quality; cultivated grass sod; type indicated in plant schedule on Drawings; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft (100 sq m). Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.

PART 3 EXECUTION

3.01 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately after delivery to site to prevent deterioration.

C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces.

D. Water sodded areas immediately after installation. Saturate sod to 4 inches (100 mm) of soil.

3.02 MAINTENANCE

A. General Contractor is responsible for the maintanance of sod until project closeout.

3.03 LOCATION

A. See Landscape Plan

B. Site Work, as needed. (no bare soil permitted)

END OF SECTION

SECTION 32 9300

PLANTS

PART 1 GENERAL **$_____**

1.01 PRICE AND PAYMENT PROCEDURES

A. Planting plan is as indicated on the Landscape Plan. Provide a bid price for plant materials, equipment, labor and maintenance.

PART 2 PRODUCTS

2.01 PLANTS

A. Plants: Species, size and quantity identified in Landscape Plan, grown in climatic conditions similar to those in locality of the work.

2.02 MULCH MATERIALS

A. Mulching Material: Hardwood species wood shavings, free of growth or germination inhibiting ingredients.

PART 3 EXECUTION

3.01 RAINGARDEN INSTALLATION

A. Remove 18 inches of soil leaving compacted 1 to 1 side slopes rising to finished grade.

B. Deeply till and break apart basin floor beyond compaction.

C. Add 2 inches of leaf compost and till into soil.

D. Finish Raingarden by hand grading a flat, level basin and 2 to 1 side slope, as indicated on Landscape Plan.

E. Add 2-inches of shredded hard wood mulch, as with slopes

F. Install edging as indicated on Landscape Plan.

G. Ensure that downspout runoff enters the raingarden.

3.02 PLANTING

A. Set plants vertical according to the Landscape Plan.

B. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

3.03 MAINTENANCE

A. Provide maintenance for 90 days at no extra cost to Owner; Owner will pay for water.

3.04 LOCATION

A. As indicated by the Landscape Plan

END OF SECTION